SITE DEVELOPMENT PLANS

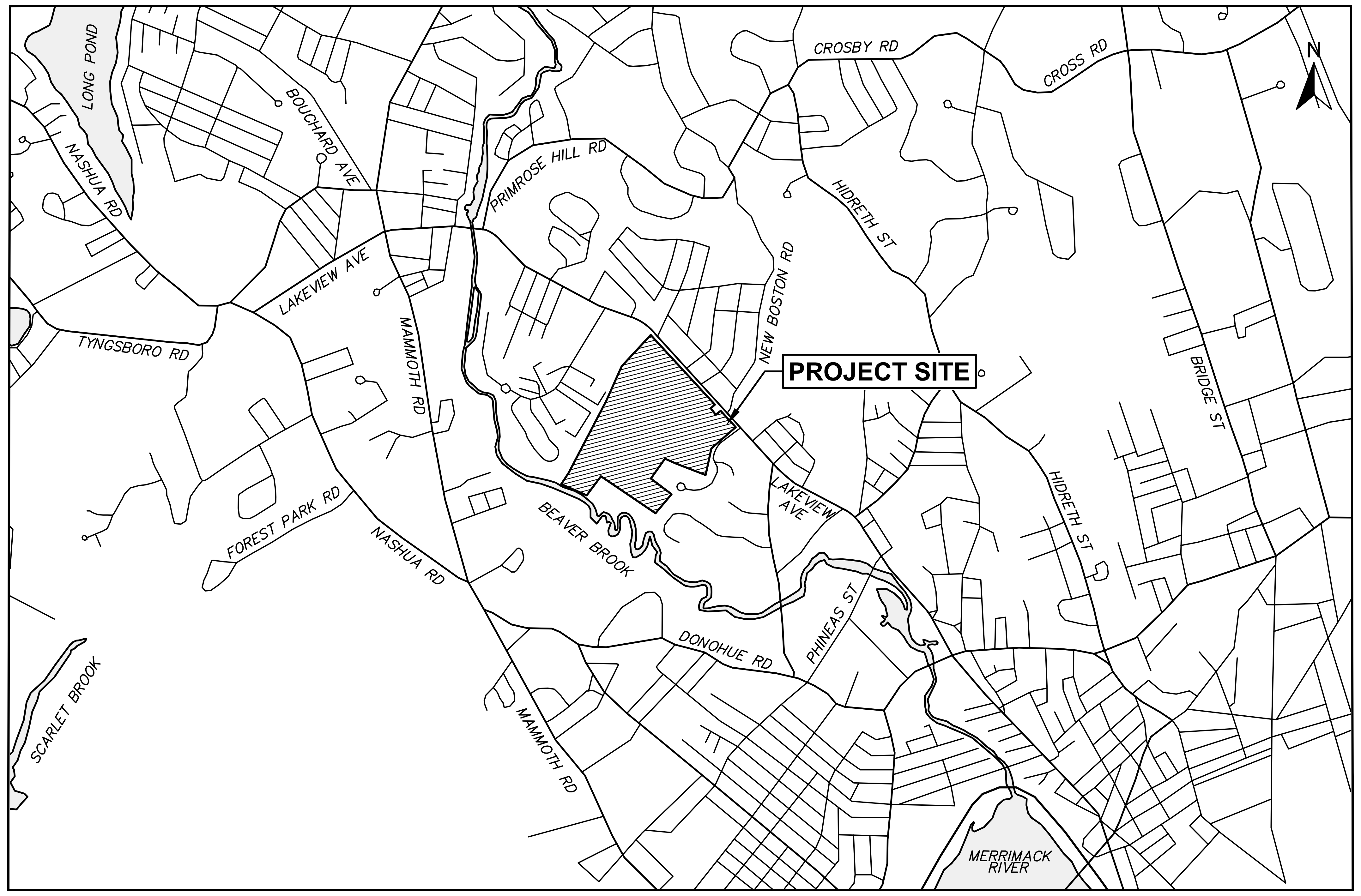
FOR THE

PEDESTRIAN SAFETY & TRAFFIC CIRCULATION IMPROVEMENTS PROJECT

DRACUT PUBLIC SCHOOLS

1624 LAKEVIEW AVENUE
DRACUT, MA 01826

APRIL 19, 2022



LOCUS MAP

1" = 1500'

100% DESIGN PLANS
ISSUED FOR BIDDING

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CONTACT DIG SAFE
72 HOURS PRIOR
TO CONSTRUCTION
DIGSAFE.COM
DIAL 811

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04/19/22

REV.	REVISION DESCRIPTION	DATE
2	100% DESIGN PLANS ISSUED FOR BIDDING	04/19/22
1	50% DESIGN REVIEW SUBMISSION	02/11/22

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AS SHOWN

ORIGINAL DATE:
FEBRUARY 11, 2022

CLIENT
TOWN OF DRACUT
62 ARLINGTON STREET
DRACUT, MA 01826

PROJECT
PEDESTRIAN SAFETY & TRAFFIC
CIRCULATION IMPROVEMENT PROJECT
DRACUT PUBLIC SCHOOLS

COVER SHEET

C1

PROJECT NO. 21.926301.00

SHEET 1 OF 16

GENERAL NOTES:

1. THE SURFACE FEATURES AND SITE TOPOGRAPHY SHOWN IN THESE PLANS ARE THE RESULT OF AN ON-SITE FIELD SURVEY PERFORMED BY DOUCET SURVEY, LLC DURING THE MONTHS OF DECEMBER 2021 AND JANUARY 2022 TOGETHER WITH THE REFERENCE PLANS CITED HEREON AND GIS INFORMATION PROVIDED BY THE TOWN OF DRACUT.
2. WETLAND DELINEATION WAS PERFORMED BY HOYLE, TANNER & ASSOCIATES, INC. ON NOVEMBER 17, 2021 AND LOCATED WITH A JUNIPER GEODE GPS.
3. THIS PROJECT IS TO BE CONSTRUCTED TO THE TYPICAL SECTIONS AND DETAILS SHOWN ON THE PLANS, AND SHALL MEET THE STANDARDS OF THE TOWN OF DRACUT AND MASSACHUSETTS STORMWATER STANDARDS.
4. THE UNDERGROUND UTILITIES SHOWN HAVE BEEN COMPILED IN PART FROM PLANS OF RECORD AND FIELD LOCATION. THE LOCATION OF UNDERGROUND UTILITIES SHOULD BE CONSIDERED APPROXIMATE.
5. THE CONTRACTOR SHALL VERIFY AND DETERMINE THE LOCATION, SIZE, AND ELEVATION OF ALL EXISTING UTILITIES, SHOWN OR NOT SHOWN ON THESE PLANS PRIOR TO THE START OF ANY CONSTRUCTION. THE CONTRACTOR SHALL LOCATE THE UTILITIES SHOWN AND THE POSSIBLE EXISTENCE OF OTHER UNDERGROUND UTILITIES BY PROVIDING OBSERVATION TEST PITS. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES FOUND INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION SHALL BE AGREED TO BY THE ENGINEER BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT "DIGSAFE" (DIAL 811) AND THE TOWN OF DRACUT AT LEAST 72 HOURS BEFORE DIGGING.
6. THE CONTRACTOR SHALL THOROUGHLY EXAMINE THE PLANS AND THE SITE OF THE PROPOSED WORK, PRIOR TO THE START OF CONSTRUCTION. ANY DISCREPANCIES FOUND IN THE CONTRACT DOCUMENTS; OR WORK THAT CANNOT BE CONSTRUCTED AS SHOWN; OR ANY METHODS PROPOSED BY THE CONTRACTOR THAT ARE IN VARIANCE WITH THE CONTRACT DOCUMENTS SHALL BE REPORTED TO THE ENGINEER IN WRITING AT LEAST 10 DAYS PRIOR TO STARTING THE WORK.
7. WRITTEN DIMENSIONS HAVE PRECEDENCE OVER SCALED DIMENSIONS. THE CONTRACTOR SHALL USE CAUTION WHEN SCALING REPRODUCED PLANS. IN CASE OF CONFLICT BETWEEN THIS PLAN SET AND ANY OTHER DRAWING AND/OR SPECIFICATION, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY FOR CLARIFICATIONS.
8. THE CONTRACTOR SHALL PROTECT AND MAINTAIN EXISTING BENCHMARKS AND BOUNDS. ALL BENCHMARKS AND BOUNDS DISTURBED BY THE CONTRACTOR SHALL BE RE-ESTABLISHED BY A QUALIFIED SURVEYOR REGISTERED WITH THE STATE OF MASSACHUSETTS AT NO EXPENSE TO THE OWNER.
9. THE CONTRACTOR SHALL USE CAUTION DURING DEMOLITION TO PROTECT ALL EXISTING FEATURES SUCH AS BUT NOT LIMITED TO FOUNDATIONS, WALLS, PAVEMENT, AND CURBING TO REMAIN.
10. ALL DEMOLITION DEBRIS, CONCRETE, MASONRY, TREES, SHRUBS, CONSTRUCTION DEBRIS AND OTHER RELATED MATERIALS SHALL BE DISPOSED OF IN STRICT ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL LAWS.
11. ALL DEWATERING MUST BE EXECUTED IN ACCORDANCE WITH THE PLANS AND MASSACHUSETTS STATE REGULATIONS. REGULATIONS PROHIBIT DISCHARGING GROUNDWATER TO A SANITARY OR COMBINED SEWER WITHOUT PERMISSION.
12. THE CONTRACTOR IS RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION AND FOR THE CONDITIONS OF THE SITE.
13. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE ALL WORK IS DONE IN ACCORDANCE WITH OSHA REQUIREMENTS.
14. ALL EXCAVATIONS SHALL BE THOROUGHLY SECURED ON A DAILY BASIS BY THE CONTRACTOR AT THE COMPLETION OF CONSTRUCTION OPERATIONS.
15. THE CONTRACTOR IS RESPONSIBLE FOR THE CONSTRUCTION AND MAINTENANCE OF TRAFFIC DETOUR(S) AROUND THE WORK FOR VEHICLES AND PEDESTRIANS.
16. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ANY EXCAVATION SAFEGUARDS, NECESSARY BARRICADES, POLICE DETAILS, ETC., FOR TRAFFIC CONTROL AND SITE SAFETY.
17. PEDESTRIAN ACCESS SHALL BE MAINTAINED AT ALL TIMES. WHEN AN AREA IS SHUT DOWN TO PERFORM WORK AN ADEQUATE DETOUR MUST BE ESTABLISHED AND CLEARLY IDENTIFIED WITH SIGNAGE TO PEDESTRIANS. PEDESTRIAN SAFETY IS OF THE UTMOST IMPORTANCE AND SHALL BE MAINTAINED AT ALL TIMES. ALL PEDESTRIAN MITIGATION SIGNS SHALL BE A MINIMUM OF 2' BY 3'. CONTRACTOR TO REVIEW ALL SIGNAGE AND FENCING ON A DAILY BASIS.
18. THE CONTRACTOR SHALL PROVIDE TEMPORARY LIGHTING THROUGHOUT CONSTRUCTION TO ACCOUNT FOR LIGHT POLES THAT ARE TO BE RELOCATED ALONG PEDESTRIAN PATHWAYS.
19. THE CONTRACTOR SHALL MAINTAIN ADEQUATE FIRE TRUCK ACCESS TO ALL BUILDINGS IN THE PROJECT AREA. CONTRACTOR TO COORDINATE WITH THE DRACUT FIRE DEPARTMENT.
20. THE CONTRACTOR SHALL ENSURE CONSTRUCTION ACTIVITIES AND VEHICLES WILL NOT BLOCK OR IMPEDE TRAFFIC ON LAKEVIEW AVENUE AND NEARBY STREETS.
21. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF ALL TEMPORARY & PERMANENT PRODUCTS (PIPE, CASTINGS, STRUCTURES, ETC.) TO THE INSPECTING ENGINEER FOR REVIEW AND APPROVAL AT LEAST TWO WEEKS PRIOR TO FABRICATION AND INSTALLATION.
22. THE CONTRACTOR IS RESPONSIBLE FOR ALL PERMITS, FEES, TEMPORARY UTILITIES AND COORDINATION WITH ALL AGENCIES IN OBTAINING ACCESS TO THE SITE AND PERFORMING ALL WORK REQUIRED FOR THIS PROJECT.
23. ALL PAVEMENT MARKINGS AND SIGNS SHALL CONFORM TO THE LATEST EDITIONS OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), AMERICANS WITH DISABILITIES (ADA) ACT, AND STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS.
24. SYMBOLS OF PROPOSED STRUCTURES SUCH AS CATCH BASINS AND DRAINAGE MANHOLES ARE EXAGGERATED FOR CLARITY ON THESE DRAWINGS. THE CENTER OF THE SYMBOL MAY NOT BE THE ACTUAL CENTER OF THE STRUCTURE IF LOCATED ALONG THE CURB. THE CONTRACTOR SHALL ADJUST FOR THIS DURING CONSTRUCTION LAYOUT.
25. ALL PROPOSED SITE FEATURES SHALL BE LAID OUT IN THE FIELD USING SURVEY EQUIPMENT. AN AUTOCAD FILE OF THE EXISTING AND PROPOSED FEATURES WITH CONTROL POINTS WILL BE PROVIDED TO THE CONTRACTOR FOR ASSISTING CONSTRUCTION LAYOUT.
26. THE CONTRACTOR SHALL SUBMIT AS-BUILT PLANS ON REPRODUCIBLE MYLAR AND IN DIGITAL FORMAT (AUTOCAD .DWG FORMAT) ON CD TO THE TOWN UPON COMPLETION OF THE PROJECT. AS-BUILTS SHALL BE PREPARED AND CERTIFIED BY A REGISTERED MASSACHUSETTS LAND SURVEYOR OR PROFESSIONAL ENGINEER.
27. ALL PROPOSED CURB SHALL BE VERTICAL GRANITE UNLESS OTHERWISE NOTED.
28. ALL EXISTING AND PROPOSED CURBS ARE EXAGGERATED TO A WIDTH OF 12" ON THESE DRAWINGS FOR CLARITY.
29. ALL WORK TO CONFORM WITH ADA GUIDELINES. ENTRANCES TO BUILDINGS, RAMPS, AND ALL OVERALL GRADING TO CONFORM WITH ADA GUIDELINES.

DRAINAGE NOTES:

1. THE STORM DRAINAGE SYSTEM SHALL BE CONSTRUCTED TO LINE AND GRADE AS SHOWN ON THE PLANS. ALL PIPE MATERIALS SHALL BE AS SPECIFIED ON THE PLANS. CONSTRUCTION METHODS SHALL CONFORM TO THE MASSACHUSETTS STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGES, SECTION 2.00 – DRAINAGE.
2. THE CONTRACTOR SHALL CONFIRM THE ELEVATIONS FOR ALL DRAIN PIPE RUNS PRIOR TO ANY INSTALLATION.
3. ALL CATCH BASIN FRAMES AND GRATES SHALL BE NEENAH R-3472 OR APPROVED EQUAL. ALL GRATES IN WALKWAYS SHALL BE ADA COMPLIANT.
4. ALL PROPOSED CATCH BASINS SHALL BE DEEP SUMP CATCH BASINS WITH 4' SUMPS.
5. THE CONTRACTOR SHALL INSTALL BELL TRAPS/OIL SEPARATOR HOODS ON ALL CATCH BASIN OUTLETS.
6. THE CONTRACTOR SHALL PROVIDE FOR THE HANDLING OF EXISTING FLOWS FROM SERVICE CONNECTIONS AND MAINLINE PIPES. THE EXISTING DRAINS MAY HAVE ACTIVE FLOW AND THE CONTRACTOR SHALL MAINTAIN CONTINUOUS FLOW WITHOUT RESTRICTIONS.
7. WHEN CONNECTING NEW PIPES TO EXISTING STRUCTURES SUCH AS MANHOLES AND CATCH BASINS, THE STRUCTURE SHALL BE COMPLETELY CLEANED OUT. THE HOLE MADE IN THE STRUCTURE SHALL BE AS SMALL AS NECESSARY. THE STRUCTURE SHALL BE REPAIRED TO MATCH ITS ORIGINAL TYPE OF CONSTRUCTION. THE JOINT BETWEEN THE STRUCTURE AND THE PIPE SHALL BE MADE WATERTIGHT BY FILLING THE JOINT WITH MORTAR.
8. ALL DRAIN PIPES SHALL HAVE A MINIMUM GROUND COVER OF 3'. IF THE REQUIRED COVER CANNOT BE OBTAINED, THE PROPOSED PIPE SHALL BE ADS N-12 DOUBLE WALLED HDPE OR APPROVED EQUAL. INSTALL 4" OF RIGID INSULATION ABOVE THE DRAIN LINE IF 3' COVER CANNOT BE OBTAINED.
9. PROPOSED RIM ELEVATIONS OF DRAINAGE MANHOLES AND CATCH BASINS ARE APPROXIMATE. FINAL ELEVATIONS ARE TO BE SET FLUSH WITH FINISH GRADES.
10. THE CONTRACTOR SHALL STABILIZE ANY AND ALL DITCHES, SLOPES AND SWALES PRIOR TO DIRECTING STORMWATER RUN-OFF TO THEM.
11. THE CONTRACTOR SHALL CLEAN AND FLUSH THE ENTIRE STORMWATER SYSTEM OF ALL SEDIMENT AND DEBRIS, WITHIN THE LIMIT OF WORK UPON COMPLETION OF CONSTRUCTION.
12. ALL PARKING AREAS AND SIDEWALKS SHALL BE SWEPT IN THE SPRING TO REMOVE SEDIMENT FROM SNOW AND ICE MANAGEMENT ACTIVITIES.
13. THE PROPOSED STORMWATER TREATMENT DEVICES SHALL BE MAINTAINED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS. THE STRUCTURES AT A MINIMUM SHALL BE INSPECTED IN THE SPRING AND FALL.

EARTHWORK & GRADING NOTES:

1. GRADE AWAY FROM BUILDING WALLS AT 1.5% MINIMUM.
2. PROVIDE UNIFORM SLOPE BETWEEN CONTOURS AND/OR SPOT ELEVATIONS.
3. SPOT GRADES SHOWN ARE PAVEMENT ELEVATIONS AT THE CURBLINE UNLESS OTHERWISE NOTED.
4. ALL GRASSED AND LANDSCAPED AREAS INSIDE THE SIDEWALKS SHALL BE GRADED TO DRAIN TO THE PROPOSED CATCH BASINS.
5. EARTH SLOPES SHALL BE NO STEEPER THAN 3:1 (HORIZONTAL: VERTICAL) AND SHALL BE FLATTER WHERE SHOWN.
6. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL ROOTS AND STUMPS OF TREES THAT ARE REMOVED.
7. ALL AREAS DISTURBED BY THE CONTRACTOR'S OPERATIONS THAT DO NOT HAVE A SURFACE TREATMENT SPECIFICALLY SPECIFIED SHALL BE RESTORED TO A MINIMUM OF 6-INCHES OF SEEDED TOPSOIL, FERTILIZER, AND MULCH.
8. THERE MAY BE ADDITIONAL ITEMS TO BE REMOVED OR AREAS OF SAWCUT AND PAVEMENT REMOVAL THAT ARE NOT SHOWN ON THESE PLANS.
9. ANY UNSUITABLE MATERIAL (I.E. MUCK, PEAT, BURIED DEBRIS) ENCOUNTERED DURING CONSTRUCTION SHALL BE REMOVED AND REPLACED WITH SUITABLE FILL MATERIAL.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING EXCAVATIONS AGAINST COLLAPSE AND SHALL PROVIDE BRACING, SHEETING, OR SHORING AS NECESSARY. TRENCHES SHALL BE KEPT DRY WHILE PIPE AND APPURTENANCES ARE BEING PLACED. DEWATERING SHALL BE USED AS REQUIRED, AND PERMITTED THROUGH LOCAL AGENCIES.
11. GENERAL FILL BEYOND PAVED AREAS SHALL BE FREE OF BRUSH RUBBISH, STUMPS, AND STONES LARGER THAN 8". FILL SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 8" IN THICKNESS. THE DRY DENSITY AFTER COMPACTION SHALL NOT BE LESS THAN 95% OF THE STANDARD PROCTOR TEST AND DONE IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM D698.
12. AFTER THE AREAS TO BE TOPSOILED HAVE BEEN BROUGHT TO GRADE, THE SUBGRADE SHALL BE LOOSENED BY SCARIFYING TO A DEPTH OF AT LEAST 2" TO ENSURE BONDING OF THE TOPSOIL AND SUBSOIL.
13. FILL OR TOPSOIL SHALL NEITHER BE PLACED NOR COMPACTED WHILE IN A FROZEN OR MUDDY CONDITION OR WHILE SUBGRADE IS FROZEN.
14. FINISH PAVEMENT/CONCRETE SURFACES AND LAWN AREAS SHALL BE FREE OF LOW SPOTS AND PONDING AREAS.
15. ALL FINISHED PAVEMENT/CONCRETE SURFACES SHALL HAVE A MINIMUM SLOPE OF 0.5% TOWARDS A DRAINAGE STRUCTURE.
16. REFER TO SITE/LANDSCAPE PLANS FOR SURFACE TREATMENTS.

EROSION CONTROL NOTES:

1. THE CONTRACTOR SHALL PREPARE AND FILE THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP).
2. THE CONTRACTOR SHALL OBTAIN A NPDES CONSTRUCTION GENERAL PERMIT.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SWPPP IMPLEMENTATION AND MONITORING.
4. EROSION CONTROL MEASURES MUST BE INSTALLED PRIOR TO ANY SITE DEMOLITION AND CONSTRUCTION.
5. REFER TO DWG C7 FOR STANDARD EROSION CONTROL NOTES AND DETAILS.

UTILITY NOTES:

1. THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES OWNING UTILITIES, EITHER OVERHEAD OR UNDERGROUND, WITHIN THE CONSTRUCTION AREA AND SHALL COORDINATE WITH THE UTILITY COMPANIES FOR RELOCATING AND/OR SUPPORTING THEIR UTILITIES IN ACCORDANCE WITH THE UTILITY OWNER SPECIFICATIONS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING ALL ARRANGEMENTS FOR ANCHORING, SUPPORTING AND/OR RELOCATING AND PROTECTING ALL UTILITIES DURING CONSTRUCTION. IN THE CASE OF DAMAGE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE RESTORATION AND THE COST OF ALL REPAIRS.
3. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING PROPER AND ADEQUATE TRENCH SHORING AND BRACING AT ALL TIMES IN ACCORDANCE WITH RECOMMENDED/REQUIRED SAFETY STANDARDS AND REGULATIONS.
4. THE CONTRACTOR SHALL FURNISH ALL PROTECTIVE AND/OR WARNING DEVICES AS REQUIRED TO CONTROL AND PROTECT THE PUBLIC IN ALL WORK AREAS. THE CONTRACTOR SHALL MAINTAIN EMERGENCY ACCESS TO ALL AREAS AFFECTED BY THE WORK AT ALL TIMES. THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING FIRE AND POLICE DISPATCHERS DAILY WHEN STREET ACCESS IS RESTRICTED OR TRAFFIC IS BEING DETOURED. DETOURS REQUIRE APPROVAL BY THE TOWN.
5. THE CONTRACTOR SHALL COORDINATE MATERIALS AND INSTALLATION SPECIFICATIONS WITH THE INDIVIDUAL UTILITY AGENCIES/COMPANIES, AND ARRANGE FOR ALL INSPECTIONS.
6. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH ALL STATE AND LOCAL CODES.
7. FINAL ELEVATIONS OF NEW UTILITY STRUCTURES ARE TO BE SET FLUSH WITH FINISH GRADES. ADJUST ALL EXISTING RIM ELEVATIONS OF MANHOLES, WATER GATES, GAS GATES, AND OTHER UTILITIES TO FINISHED GRADE WITHIN LIMITS OF WORK.
8. ALL ELECTRIC MATERIAL WORKMANSHIP SHALL CONFORM TO THE NATIONAL ELECTRIC CODE AS WELL AS STATE AND LOCAL CODES.
9. INSTALL NYLON PULL ROPES IN UNDERGROUND CONDUITS TO FACILITATE PULLING CABLES.
10. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL HANDHOLES, FITTINGS, CONNECTORS, COVER PLATES, AND OTHER MISCELLANEOUS ITEMS NOT NECESSARILY DETAILED ON THESE DRAWINGS TO RENDER INSTALLATION OF UTILITIES COMPLETE AND OPERATIONAL.
11. CONTRACTOR TO COORDINATE UNDERGROUND ELECTRIC, INCLUDING BUT NOT LIMITED TO SIZE, LOCATION, MATERIAL, CONDUIT, AND HAND HOLES.
12. ALL ON-SITE UTILITIES SHALL BE UNDERGROUND.
13. THE CONTRACTOR SHALL REVIEW THE LOCATION OF ALL OVERHEAD WIRES WITHIN THE PROJECT AREA IN THE FIELD TO DETERMINE THEIR IMPACT ON CONSTRUCTION MEANS AND METHODS.

LANDSCAPE NOTES:

1. ALL MATERIALS SHALL CONFORM TO THE GUIDELINES ESTABLISHED BY THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION.
2. ALL TREES TO BE BALLED & BURLAPED.
3. MULCH FOR PLANTED AREAS TO BE AGED PINE BARK: PARTIALLY DECOMPOSED, DARK BROWN IN COLOR AND FREE OF WOOD CHIPS THICKER THAN 1/4 INCH. THE MULCH SHALL BE APPLIED TO A DEPTH OF 4".
4. THE LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL PLANT MATERIALS FOR ONE (1) FULL YEAR FROM DATE OF ACCEPTANCE.
5. THE CONTRACTOR SHALL LOCATE, VERIFY, AND MARK ALL EXISTING AND NEWLY INSTALLED UNDERGROUND UTILITIES PRIOR TO ANY LAWN WORK OR PLANTING. ANY CONFLICTS WHICH MIGHT OCCUR BETWEEN PLANTING AND UTILITIES SHALL BE IMMEDIATELY REPORTED TO THE OWNER SO THAT ALTERNATE PLANTING LOCATIONS CAN BE DETERMINED.
6. NO SUBSTITUTION OF PLANT MATERIALS WILL BE ALLOWED WITHOUT THE PRIOR WRITTEN APPROVAL OF THE OWNER.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING & PROPOSED PLANTING AND LAWNS AGAINST DAMAGE FROM ONGOING CONSTRUCTION. THIS PROTECTION SHALL BEGIN AT THE TIME THE PLANT IS INSTALLED UNTIL FORMAL ACCEPTANCE OF ALL THE PLANTING.
8. PRE-PURCHASE PLANT MATERIAL AND ARRANGE FOR DELIVERY TO MEET PROJECT SCHEDULE AS REQUIRED. IT MAY BE NECESSARY TO PRE DIG CERTAIN SPECIES WELL IN ADVANCE OF ACTUAL PLANTING DATES.

ABBREVIATIONS:

ABAN	ABANDONED
ACP	ASBESTOS CONCRETE PIPE
ADJ	ADJUST
APPROX	APPROXIMATE
AS	AUTO SPRINKLER
B=	BOTTOM=
BC	BOTTOM OF CURB
BERM	BITUMINOUS CONCRETE BERM
BIT CONC	BITUMINOUS CONCRETE
BLDG	BUILDING
BWLL	BROKEN WHITE LANE LINE
BW	BOTTOM OF WALL
CB	CATCH BASIN
CBRND	CATCH BASIN ROUND
CBSQ	CATCH BASIN SQAURE
CI	CAST IRON
CICL	CAST IRON CEMENT LINED
CIP	CAST IN PLACE
℄	CENTER LINE
CLF	CHAIN LINK FENCE
CMP	CORRUGATED METAL PIPE
CO	CLEAN OUT
COL	COLUMN
CONC	CONCRETE
CONST.	CONSTRUCT
CP	CONCRETE PIPE
CR	CONDENSATE RETURN
DHW	DESIGN HIGH WATER
DIP	DUCTILE IRON PIPE
DICL	DUCTILE IRON CEMENT LINED
DIA	DIAMETER
DMH	DRAIN MANHOLE
DWSL	DASHED SINGLE WHITE LINE
DWG	DRAWING
DYL	DOUBLE YELLOW LINE
EG	EDGE OF GRAVEL
EL, ELEV	ELEVATION
ELEC	ELECTRIC
EM	ELECTRIC METER
EMH	ELECTRIC MANHOLE
EP	EDGE OF PAVEMENT
EXIST	EXISTING
FDC	FIRE DEPARTMENT CONNECTION
FES	FLARED END SECTION
FFE	FINISH FLOOR ELEVATION
FM	FORCE MAIN
GC	GRANITE CURB
GG	GAS GATE
GM	GAS METER
GR	GUARDRAIL
GW	GUY WIRE
HDPE	HIGH DENSITY POLYETHYLENE
HDS	HYDRODYNAMIC SEPARATOR
HDWL	HEADWALL
HH	HAND HOLE
"HP"	"HANDICAP PARKING" SIGN
HORIZ	HORIZONTAL
HR	HANDRAIL
HVAC	HEAT VENT AIR CONDITIONING
HYD	HYDRANT
INV	INVERT
IP	IRON PIPE
LP	LIGHT POLE
LS	LANDSCAPED
LT	LEFT
MC	METAL COVER
MAX	MAXIMUM
MEP	MECHANICAL/ELECTRICAL/PLUMBING
MHW	MEAN HIGH WATER
MIN	MINIMUM
NO, #	NUMBER
NTS	NOT TO SCALE
OCS	OUTLET CONTROL STRUCTURE
OHW	OVERHEAD WIRES
"OWO"	"ONE WAY ONLY" SIGN
PB	PULL BOX
PERF	PERFORATED
PROP	PROPOSED
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
PVI	POST VALVE INDICATOR
R=	RIM=
RCP	REINFORCED CONCRETE PIPE
R&D	REMOVE & DISPOSE
(rec)	RECORD
RET. WALL	RETAINING WALL
RT	RIGHT
SBB	SLOPED BITUMINOUS BERM
"SDO"	"STUDENT DROP OFF" SIGN
SGC	SLOPED GRANITE CURB
SMH	SEWER MANHOLE
SHWT	SEASONAL HIGH WATER TABLE
SS	SANITARY SEWER
STA	STATION
SW	SIDEWALK
SWEL	SOLID WHITE EDGE LINE
SWL	SINGLE WHITE LINE
SWLL	SOLID WHITE LANE LINE
SYL	SINGLE YELLOW LINE
TC	TOP OF CURB
TCB	TRAFFIC CONTROL BOX
TEL	TELEPHONE
TMH	TELEPHONE MANHOLE
TP	TEST PIT
TRANS	TRANSFORMER
TW	TOP OF WALL
TYP	TYPICAL
UNK	UNKNOWN
UP	UTILITY POLE
VBB	VERTICAL BITUMINOUS BERM
VCC	VERTICAL CONCRETE CURB
VCP	VITREOUS CLAY PIPE
VERT	VERTICAL
VGC	VERTICAL GRANITE CURB
"VPO"	"VISITOR PARKING ONLY" SIGN
W	WATER
WC	WYE CONNECTION
WF	WETLAND FLAG
WV	WATER VALVE
WM	WATER METER
YD	YARD DRAIN

LEGEND

EXISTING	PROPOSED	DESCRIPTION
—	━	PROPERTY LINE
—	━	RIGHT OF WAY
— — —	— — —	EASEMENT
⊡ △ ○	▣ ▲ ●	SURVEY MONUMENT
▬ ▬ ▬	▬ ▬ ▬	LIMIT OF DEVELOPMENT
WF A1	WF A1	WETLAND LINE WITH FLAG
50' BUFFER	50' BUFFER	WETLAND BUFFER
▨		ROCK/LEDGE
— — —	— — —	EDGE OF GRAVEL
—	—	EDGE OF PAVEMENT
—	—	EDGE OF CONCRETE
BB	BB	BITUMINOUS BERM
BC	BC	BITUMINOUS CURB
CC	CC	CONCRETE CURB
VCC	VCC	VERTICAL CONC. CURB
SGC	SGC	SLOPED GRANITE CURB
VGC	VGC	VERTICAL GRANITE CURB
	— — —	SAWCUT
⟍⟍⟍⟍	∟	BUILDING
◁EN	◁EN	BUILDING ENTRANCE
◀LD	◀LD	LOADING DOCK
⊙	●	BOLLARD
–○–	–○–	SIGN
=○=	=○=	DOUBLE SIGN
⊙ ✺	⊙	TREE
⌒⌒⌒	﹏﹏﹏	TREELINE
- - - -	—×—×—	CHAINLINK FENCE
—○—○—	—○—○—	FENCE
—□—□—	—□—□—	STOCKADE FENCE
═ ═ ═	═══	RETAINING WALL
—	━	STREAM/POND/WATERCOURSE
— ·· —	— ·· —	DETENTION BASIN
	—○—○—	SILT SOCK
↝	↝	DRAINAGE FLOW
— > —	— > —	SWALE
— — 98 — —	—98—	MINOR CONTOUR
— 100 —	—100—	MAJOR CONTOUR
⇨	➡	RETRO-REFLECTIVE TRAFFIC ARROW
—	SWL	SINGLE WHITE LINE
═	DYL	DOUBLE YELLOW LINE
▬	▬	STOP LINE
═	═	CROSSWALK
⏢	⏢	ACCESSIBLE CURB RAMP
▬	▩	DETECTABLE WARNING PANEL
♿	♿	ACCESSIBLE PARKING
♿ VAN	♿ VAN	VAN-ACCESSIBLE PARKING
×	× 97.5	SPOT ELEVATION
— UD —	— UD —	UNDER DRAIN
— D —	— D —	DRAIN
— S —	— S —	SEWER
— OHW —	— OHW —	OVERHEAD WIRE
— W —	— W —	WATER
— FP —	— FP —	FIRE PROTECTION
— G —	— G —	GAS
— UE —	— UE —	UNDERGROUND ELECTRIC
— T —	— T —	TELEPHONE
⊕ ▤	⊕ ▦	CATCH BASIN
▤▤	▦▦	DOUBLE CATCH BASIN
Ⓓ	Ⓓ	DRAIN MANHOLE
▭	▬	TRENCH DRAIN
⊐	⊐	PLUG OR CAP
○CO	○CO	CLEANOUT
◁ FES	◀	FLARED END SECTION
▭	◡	HEADWALL
Ⓢ	Ⓢ	SEWER MANHOLE
○WSO	○WSO	WATER SHUT-OFF
WV ⋈	WV ⋈	WATER VALVE & BOX
TSV	TSV	TAPPING SLEEVE,VALVE&BOX
✲	HYD	FIRE HYDRANT
⊥	⊥	THRUST BLOCK
□WM	□WM	WATER METER
Ⓦ	Ⓦ	WATER WELL
Ⓔ	Ⓔ	ELECTRIC MANHOLE
□EM	□EM	ELECTRIC METER
☼	☼	LIGHT POLE
T	T	TRANSFORMER PAD
○	○	UTILITY POLE
○—∘	○—	UTILITY POLE & GUY WIRE
—<	—<	GUY WIRE & ANCHOR
○ □ HH	□HH	HAND HOLE
□PB	□PB	PULL BOX
	▩	INLET PROTECTION
	⬭	STONE CHECK DAM
	⊗	TREE TO BE REMOVED
	▦	STABILIZED CONSTRUCTION ENTRANCE
	▨	STRUCTURE TO BE REMOVED
	▤	DEMO – FULL DEPTH RECLAIM
	▧	DEMO – MILL & OVERLAY
	▩	DEMO – PAVEMENT TO BE REMOVED
	☐	SITE LAYOUT – NEW PAVEMENT
	▨	SITE LAYOUT – 1.5" MILL & OVERLAY
	▨	SITE LAYOUT – 12" RECLAIM
	▦	CONCRETE
	▦	RIP-RAP
	▩	EROSION CONTROL MATTING

COMMONWEALTH OF MASSACHUSETTS
WILLIAM R. DAVIDSON
CIVIL
NO. 50036
REGISTERED PROFESSIONAL ENGINEER
04/19/22

REV.	REVISION DESCRIPTION	DATE
2	100% DESIGN PLANS ISSUED FOR BIDDING	04/19/22
1	50% DESIGN REVIEW SUBMISSION	02/11/22

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SMT/JCH	JCH/SCR	WRD

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SCALE:
AS SHOWN

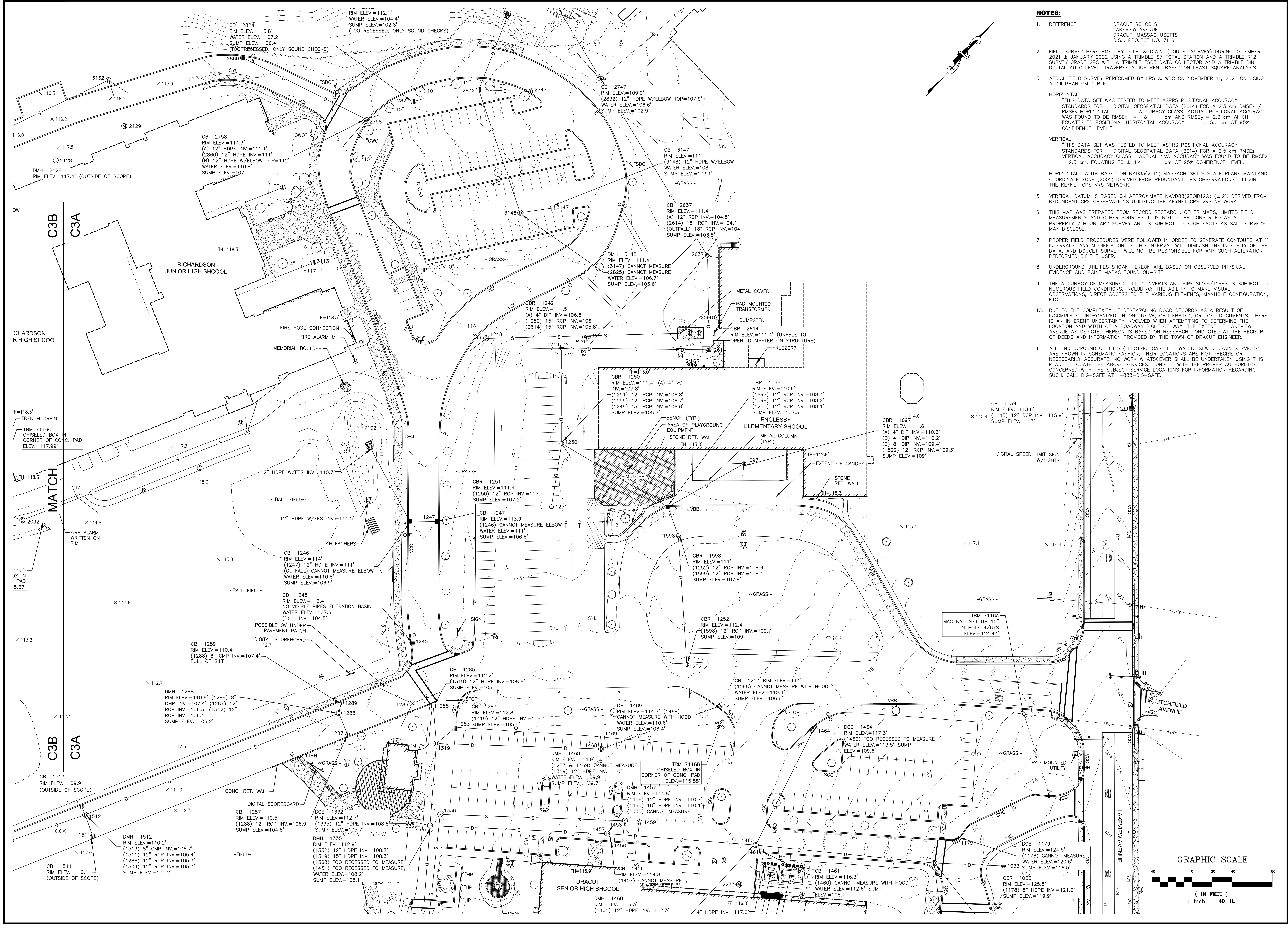
ORIGINAL DATE:
FEBRUARY 11, 2022

CLIENT
TOWN OF DRACUT
62 ARLINGTON STREET
DRACUT, MA 01826

PROJECT
PEDESTRIAN SAFETY & TRAFFIC
CIRCULATION IMPROVEMENT PROJECT
DRACUT PUBLIC SCHOOLS

PROJECT NOTES &
LEGEND
C2

PROJECT NO. 21.926301.00


MATCH
C3B
C3A
RICHARDSON JUNIOR HIGH SHCOOL
ENGLESBY ELEMENTARY SHCOOL
DRACUT SENIOR HIGH SHCOOL
LAKEVIEW AVENUE
LITCHFIELD AVENUE
~GRASS~
~BALL FIELD~
~FIELD~
CB 2824 RIM ELEV.=113.8' WATER ELEV.=107.2' SUMP ELEV.=106.4' (TOO RECESSED, ONLY SOUND CHECKS)
RIM ELEV.=112.1' WATER ELEV.=104.4' SUMP ELEV.=102.8' (TOO RECESSED, ONLY SOUND CHECKS)
CB 2747 RIM ELEV.=109.9' (2832) 12" HDPE W/ELBOW TOP=107.9' WATER ELEV.=106.6' SUMP ELEV.=102.9'
CB 2758 RIM ELEV.=114.3' (A) 12" HDPE INV.=111.1' (2860) 12" HDPE INV.=111' (B) 12" HDPE W/ELBOW TOP=112' WATER ELEV.=110.8' SUMP ELEV.=107'
DMH 2128 RIM ELEV.=117.4' (OUTSIDE OF SCOPE)
CB 3147 RIM ELEV.=111' (3148) 12" HDPE W/ELBOW WATER ELEV.=108' SUMP ELEV.=103.1'
CB 2637 RIM ELEV.=111.4' (A) 12" RCP INV.=104.8' (2614) 18" RCP INV.=104.1' (OUTFALL) 18" RCP INV.=104' SUMP ELEV.=103.5'
DMH 3148 RIM ELEV.=111.4' (3147) CANNOT MEASURE (2825) CANNOT MEASURE WATER ELEV.=106.7' SUMP ELEV.=103.6'
CBR 1249 RIM ELEV.=111.5' (A) 4" DIP INV.=106.8' (1250) 15" RCP INV.=106' (2614) 15" RCP INV.=105.8'
CBR 2614 RIM ELEV.=111.4' (UNABLE TO OPEN, DUMPSTER ON STRUCTURE)
METAL COVER
PAD MOUNTED TRANSFORMER
DUMPSTER
FREEZER?
CBR 1250 RIM ELEV.=111.4' (A) 4" VCP INV.=107.8' (1251) 12" RCP INV.=106.8' (1599) 12" RCP INV.=106.7' (1249) 15" RCP INV.=106.6' SUMP ELEV.=105.7'
CBR 1599 RIM ELEV.=110.9' (1697) 12" RCP INV.=108.3' (1598) 12" RCP INV.=108.2' (1250) 12" RCP INV.=108.1' SUMP ELEV.=107.5'
BENCH (TYP.)
AREA OF PLAYGROUND EQUIPMENT
STONE RET. WALL
METAL COLUMN (TYP.)
CBR 1697 RIM ELEV.=111.6' (A) 4" DIP INV.=110.3' (B) 4" DIP INV.=110.2' (C) 8" DIP INV.=109.4' (1599) 12" RCP INV.=109.3' SUMP ELEV.=109'
EXTENT OF CANOPY
CB 1139 RIM ELEV.=118.6' (1145) 12" RCP INV.=115.9' SUMP ELEV.=113'
DIGITAL SPEED LIMIT SIGN W/LIGHTS
TBM 7116C CHISELED BOX IN CORNER OF CONC. PAD ELEV.=117.99'
TRENCH DRAIN
FIRE HOSE CONNECTION
FIRE ALARM MH
MEMORIAL BOULDER
12" HDPE W/FES INV.=110.7'
12" HDPE W/FES INV.=111.5'
FIRE ALARM WRITTEN ON RIM
BLEACHERS
CBR 1251 RIM ELEV.=111.4' (1250) 12" RCP INV.=107.4' SUMP ELEV.=107.2'
CB 1247 RIM ELEV.=113.9' (1246) CANNOT MEASURE ELBOW WATER ELEV.=111' SUMP ELEV.=106.8'
CB 1246 RIM ELEV.=114' (1247) 12" HDPE INV.=111' (OUTFALL) CANNOT MEASURE ELBOW WATER ELEV.=110.8' SUMP ELEV.=106.9'
CB 1245 RIM ELEV.=112.4' NO VISIBLE PIPES FILTRATION BASIN WATER ELEV.=107.6' (?) INV.=104.5'
POSSIBLE GV UNDER PAVEMENT PATCH
DIGITAL SCOREBOARD
CBR 1598 RIM ELEV.=111' (1252) 12" RCP INV.=108.6' (1599) 12" RCP INV.=108.4' SUMP ELEV.=107.8'
CBR 1252 RIM ELEV.=112.4' (1598) 12" RCP INV.=109.7' SUMP ELEV.=109'
TBM 7116A MAG NAIL SET UP 10" IN POLE 4/67S ELEV.=124.43'
CB 1289 RIM ELEV.=110.4' (1288) 8" CMP INV.=107.4' FULL OF SILT
DMH 1288 RIM ELEV.=110.6' (1289) 8" CMP INV.=107.4' (1287) 12" RCP INV.=106.5' (1512) 12" RCP INV.=106.4' SUMP ELEV.=106.2'
CB 1285 RIM ELEV.=112.2' (1319) 12" HDPE INV.=108.6' SUMP ELEV.=105'
CB 1283 RIM ELEV.=112.8' (1319) 12" HDPE INV.=109.4' SUMP ELEV.=105.5'
CB 1469 RIM ELEV.=114.7' (1468) CANNOT MEASURE WITH HOOD WATER ELEV.=110.6' SUMP ELEV.=106.4'
CB 1253 RIM ELEV.=114' (1598) CANNOT MEASURE WITH HOOD WATER ELEV.=110.4' SUMP ELEV.=106.6'
DCB 1464 RIM ELEV.=117.3' (1460) TOO RECESSED TO MEASURE WATER ELEV.=113.5' SUMP ELEV.=109.6'
DMH 1468 RIM ELEV.=114.9' (1253 & 1469) CANNOT MEASURE (1319) 12" HDPE INV.=110' WATER ELEV.=109.9' SUMP ELEV.=109.7'
TBM 7116B CHISELED BOX IN CORNER OF CONC. PAD ELEV.=115.88'
DMH 1457 RIM ELEV.=114.8' (1456) 12" HDPE INV.=110.7' (1460) 18" HDPE INV.=110.1' (1335) CANNOT MEASURE
PAD MOUNTED UTILITY
CB 1513 RIM ELEV.=109.9' (OUTSIDE OF SCOPE)
CONC. RET. WALL
DIGITAL SCOREBOARD
CB 1287 RIM ELEV.=110.5' (1288) 12" RCP INV.=106.9' SUMP ELEV.=104.8'
DCB 1332 RIM ELEV.=112.7' (1335) 12" HDPE INV.=108.8' SUMP ELEV.=105.7'
DMH 1335 RIM ELEV.=112.9' (1332) 12" HDPE INV.=108.7' (1319) 15" HDPE INV.=108.3' (1368) TOO RECESSED TO MEASURE (1451) TOO RECESSED TO MEASURE WATER ELEV.=108.2' SUMP ELEV.=108.1'
DMH 1512 RIM ELEV.=110.2' (1513) 8" CMP INV.=106.7' (1511) 12" RCP INV.=105.4' (1288) 12" RCP INV.=105.3' (1509) 12" RCP INV.=105.3' SUMP ELEV.=105.2'
CB 1511 RIM ELEV.=110.1' (OUTSIDE OF SCOPE)
CB 1456 RIM ELEV.=114.8' (1457) CANNOT MEASURE
DMH 1460 RIM ELEV.=116.3' (1461) 12" HDPE INV.=112.3'
CB 1461 RIM ELEV.=116.3' (1460) CANNOT MEASURE WITH HOOD WATER ELEV.=112.6' SUMP ELEV.=108.4'
DCB 1179 RIM ELEV.=124.5' (1178) CANNOT MEASURE WATER ELEV.=120.6' SUMP ELEV.=116.5'
CBR 1033 RIM ELEV.=125.5' (1178) 8" HDPE INV.=121.9' SUMP ELEV.=119.9'
FF=116.0'
4" HDPE INV.=117.0'
TH=118.3'
TH=113.0'
TH=112.9'
TH=115.2'
TH=115.9'
GRAPHIC SCALE
0 20 40 80
(IN FEET)
1 inch = 40 ft.

NOTES:

1. REFERENCE: DRACUT SCHOOLS
   LAKEVIEW AVENUE
   DRACUT, MASSACHUSETTS
   D.S.I. PROJECT NO. 7116

2. FIELD SURVEY PERFORMED BY D.J.B. & G.A.N. (DOUCET SURVEY) DURING DECEMBER 2021 & JANUARY 2022 USING A TRIMBLE S7 TOTAL STATION AND A TRIMBLE R12 SURVEY GRADE GPS WITH A TRIMBLE TSC3 DATA COLLECTOR AND A TRIMBLE DINI DIGITAL AUTO LEVEL. TRAVERSE ADJUSTMENT BASED ON LEAST SQUARE ANALYSIS.

3. AERIAL FIELD SURVEY PERFORMED BY LPS & WDC ON NOVEMBER 11, 2021 ON USING A DJI PHANTOM 4 RTK.

   HORIZONTAL

   "THIS DATA SET WAS TESTED TO MEET ASPRS POSITIONAL ACCURACY STANDARDS FOR DIGITAL GEOSPATIAL DATA (2014) FOR A 2.5 cm RMSEx / RMSEy HORIZONTAL ACCURACY CLASS. ACTUAL POSITIONAL ACCURACY WAS FOUND TO BE RMSEx = 1.8 cm AND RMSEy = 2.3 cm WHICH EQUATES TO POSITIONAL HORIZONTAL ACCURACY = ± 5.0 cm AT 95% CONFIDENCE LEVEL."

   VERTICAL

   "THIS DATA SET WAS TESTED TO MEET ASPRS POSITIONAL ACCURACY STANDARDS FOR DIGITAL GEOSPATIAL DATA (2014) FOR A 2.5 cm RMSEz VERTICAL ACCURACY CLASS. ACTUAL NVA ACCURACY WAS FOUND TO BE RMSEz = 2.3 cm, EQUATING TO ± 4.4 cm AT 95% CONFIDENCE LEVEL."

4. HORIZONTAL DATUM BASED ON NAD83(2011) MASSACHUSETTS STATE PLANE MAINLAND COORDINATE ZONE (2001) DERIVED FROM REDUNDANT GPS OBSERVATIONS UTILIZING THE KEYNET GPS VRS NETWORK.

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8. UNDERGROUND UTILITIES SHOWN HEREON ARE BASED ON OBSERVED PHYSICAL EVIDENCE AND PAINT MARKS FOUND ON-SITE.

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10. DUE TO THE COMPLEXITY OF RESEARCHING ROAD RECORDS AS A RESULT OF INCOMPLETE, UNORGANIZED, INCONCLUSIVE, OBLITERATED, OR LOST DOCUMENTS, THERE IS AN INHERENT UNCERTAINTY INVOLVED WHEN ATTEMPTING TO DETERMINE THE LOCATION AND WIDTH OF A ROADWAY RIGHT OF WAY. THE EXTENT OF LAKEVIEW AVENUE AS DEPICTED HEREON IS BASED ON RESEARCH CONDUCTED AT THE REGISTRY OF DEEDS AND INFORMATION PROVIDED BY THE TOWN OF DRACUT ENGINEER.

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WILLIAM R. DAVIDSON
CIVIL
NO. 50036
04/19/22

REV.	REVISION DESCRIPTION	DATE
2	100% DESIGN PLANS ISSUED FOR BIDDING	04/19/22
1	50% DESIGN REVIEW SUBMISSION	02/11/22

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SCALE: AS SHOWN
ORIGINAL DATE: FEBRUARY 11, 2022

CLIENT
TOWN OF DRACUT
62 ARLINGTON STREET
DRACUT, MA 01826

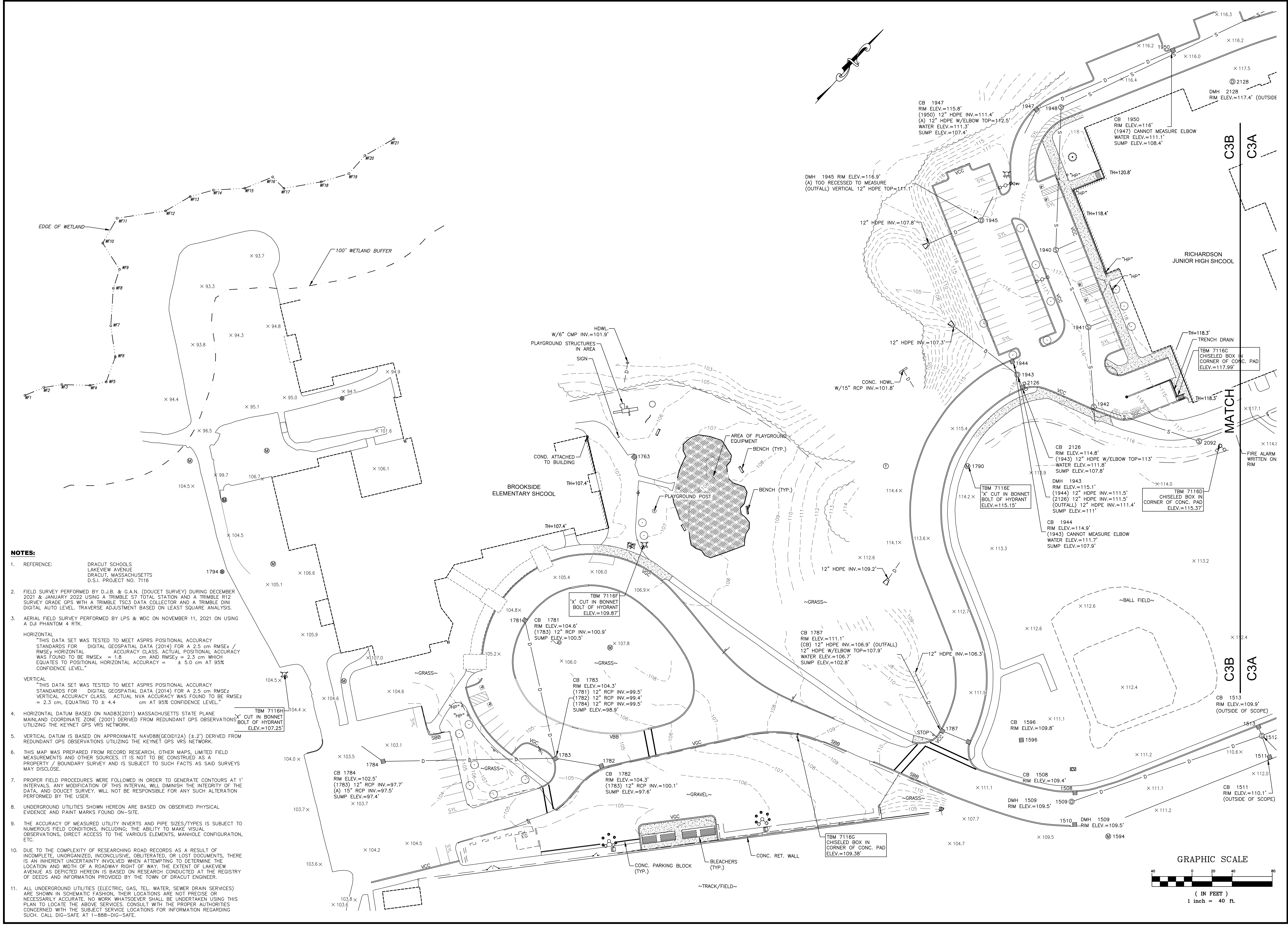
PROJECT
PEDESTRIAN SAFETY & TRAFFIC
CIRCULATION IMPROVEMENT PROJECT
DRACUT PUBLIC SCHOOLS

EXISTING CONDITIONS
PLAN A

C3A

PROJECT NO. 21.926301.00

SHEET 3 OF 16



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WILLIAM R.
DAVIDSON
CIVIL
NO. 50030

04/19/22

REV.	REVISION DESCRIPTION	DATE
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1	50% DESIGN REVIEW SUBMISSION	02/11/22

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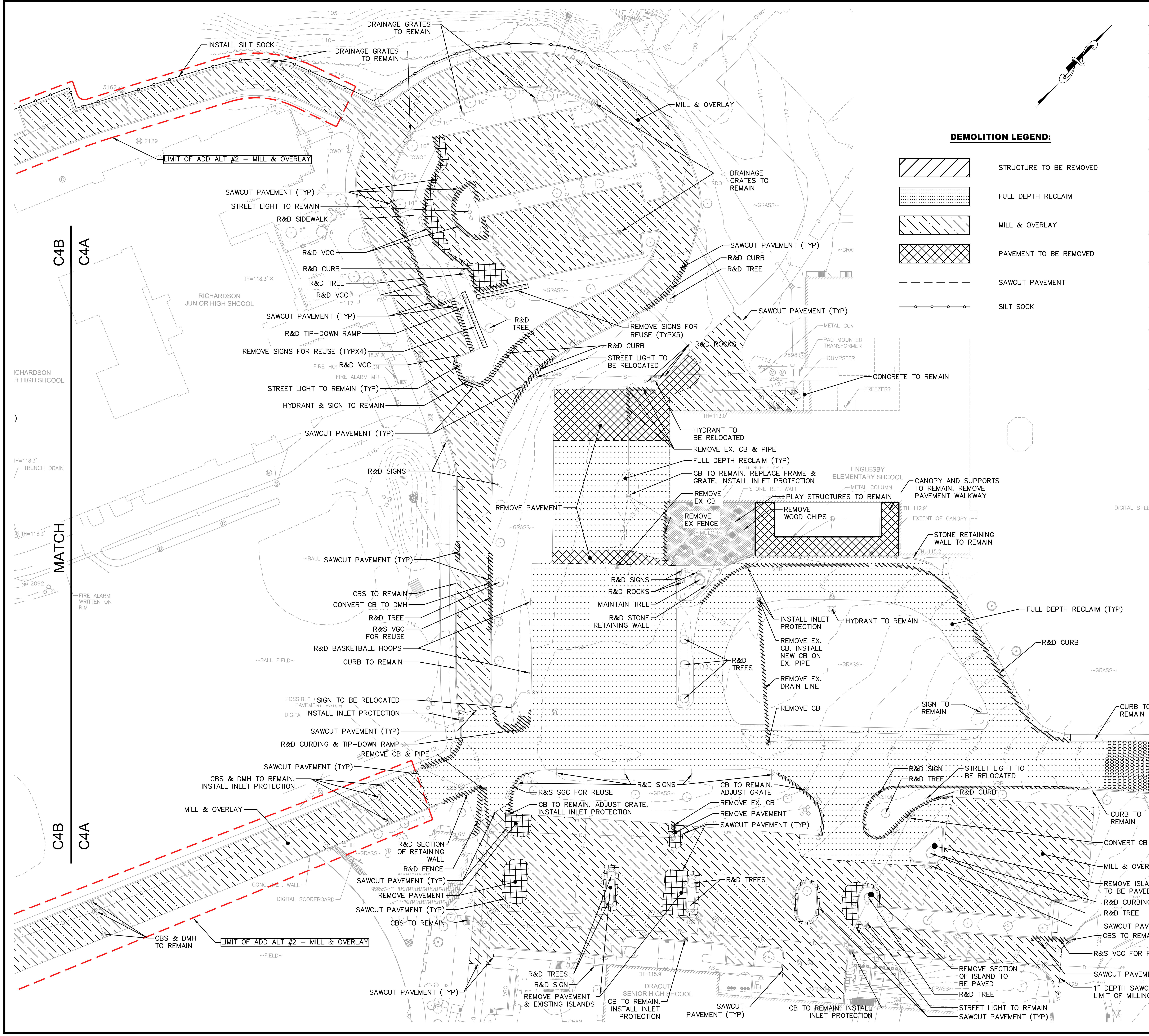
EXISTING CONDITIONS
PLAN B

C3B

PROJECT NO. 21.926301.00

SHEET 4 OF 16



DEMOLITION LEGEND:

▨	STRUCTURE TO BE REMOVED
░	FULL DEPTH RECLAIM
▧	MILL & OVERLAY
▩	PAVEMENT TO BE REMOVED
— — —	SAWCUT PAVEMENT
—o—o—	SILT SOCK

DEMOLITION NOTES:

1. REFER TO DWG C2 FOR NOTES, ABBREVIATIONS AND LEGEND.
2. REFER TO DWGS C7–C11 FOR CONSTRUCTION DETAILS.
3. EROSION & SEDIMENT CONTROL MEASURES ARE TO BE PROPERLY INSTALLED AROUND THE SITE AS SHOWN ON THIS SHEET AND FUNCTION PROPERLY PRIOR TO INITIATION OF DEMOLITION ACTIVITIES.
4. PRIOR TO ANY DEMOLITION THE CONTRACTOR SHALL OBTAIN ANY NECESSARY DEMOLITION PERMITS AND PAY ALL RELATED FEES.
5. ALL EXISTING ABOVE AND BELOW GROUND STRUCTURES WITHIN THE LIMITS OF CONSTRUCTION SHALL REMAIN UNLESS NOTED OTHERWISE WITHIN THIS CONSTRUCTION SET AND/OR PROJECT SPECIFICATIONS.
6. ALL DEMOLITION WASTE AND CONSTRUCTION DEBRIS SHALL BECOME THE PROPERTY OF THE CONTRACTOR UNLESS OTHERWISE DESIGNATED AND SHALL BE REMOVED BY THE CONTRACTOR AND DISPOSED OF OFFSITE IN A STATE APPROVED WASTE SITE AND IN ACCORDANCE WITH ALL LOCAL AND STATE CODES AND PERMIT REQUIREMENTS.
7. ALL UTILITY DISCONNECTION, REMOVAL, RELOCATION, CUTTING, CAPPING AND/OR ABANDONMENT SHALL BE COORDINATED WITH THE APPROPRIATE UTILITY COMPANY/AGENCY. UTILITY CONTACTS ARE LISTED ON THE COVER SHEET.
8. CAVITIES LEFT BY STRUCTURE REMOVAL SHALL BE BACKFILLED WITH SATISFACTORY MATERIALS AND COMPACTED TO THE GENERAL FILL REQUIREMENTS.
9. CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES, STRUCTURES, AND FEATURES TO REMAIN. ANY ITEMS TO REMAIN THAT HAVE BEEN DISTURBED OR DAMAGED AS A RESULT OF CONSTRUCTION SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.
10. PROVIDE NEAT, STRAIGHT, FULL DEPTH, SAWCUTS OF EXISTING PAVEMENT WHERE INDICATED ALONG LIMITS OF PAVEMENT REMOVAL.
11. ALL PAVEMENT, BASE COURSES, SIDEWALKS, CURBS, ETC., WITHIN THE PROJECT AREA TO BE DEMOLISHED SHALL BE REMOVED TO FULL DEPTH. EXISTING BASE COURSE MATERIALS MAY BE WORKED INTO THE NEW PAVEMENT SUBGRADE IF THE GRADATION, CONSISTENCY, COMPACTION, SUBGRADE CONDITION, ETC., ARE IN ACCORDANCE WITH THE SPECIFICATIONS. BASE COURSE MATERIALS SHALL NOT BE WORKED INTO THE SUBGRADE AREAS TO RECEIVE LANDSCAPING.
12. THE CONTRACTOR SHALL USE SUITABLE METHODS TO CONTROL DUST AND DIRT CAUSED BY THE DEMOLITION ACTIVITIES.

GRAPHIC SCALE

40 0 20 40 80

(IN FEET)
1 inch = 40 ft.

WILLIAM R. DAVIDSON
CIVIL
NO. 50030
04/19/22

REV.	REVISION DESCRIPTION	DATE
2	100% DESIGN PLANS ISSUED FOR BIDDING	04/19/22
1	50% DESIGN REVIEW SUBMISSION	02/11/22

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HOYLE TANNER

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SCALE:	ORIGINAL DATE:	DESIGNED BY	DRAWN BY	CHECKED BY
AS SHOWN	FEBRUARY 11, 2022	SMT/JCH	JCH/SCR	WRD

CLIENT
TOWN OF DRACUT
62 ARLINGTON STREET
DRACUT, MA 01826

PROJECT
PEDESTRIAN SAFETY & TRAFFIC
CIRCULATION IMPROVEMENT PROJECT
DRACUT PUBLIC SCHOOLS

SITE PREP, DEMO &
EROSION CONTROL
PLAN A

C4A

PROJECT NO. 21.926301.00

SHEET 5 OF 16

DEMOLITION NOTES:

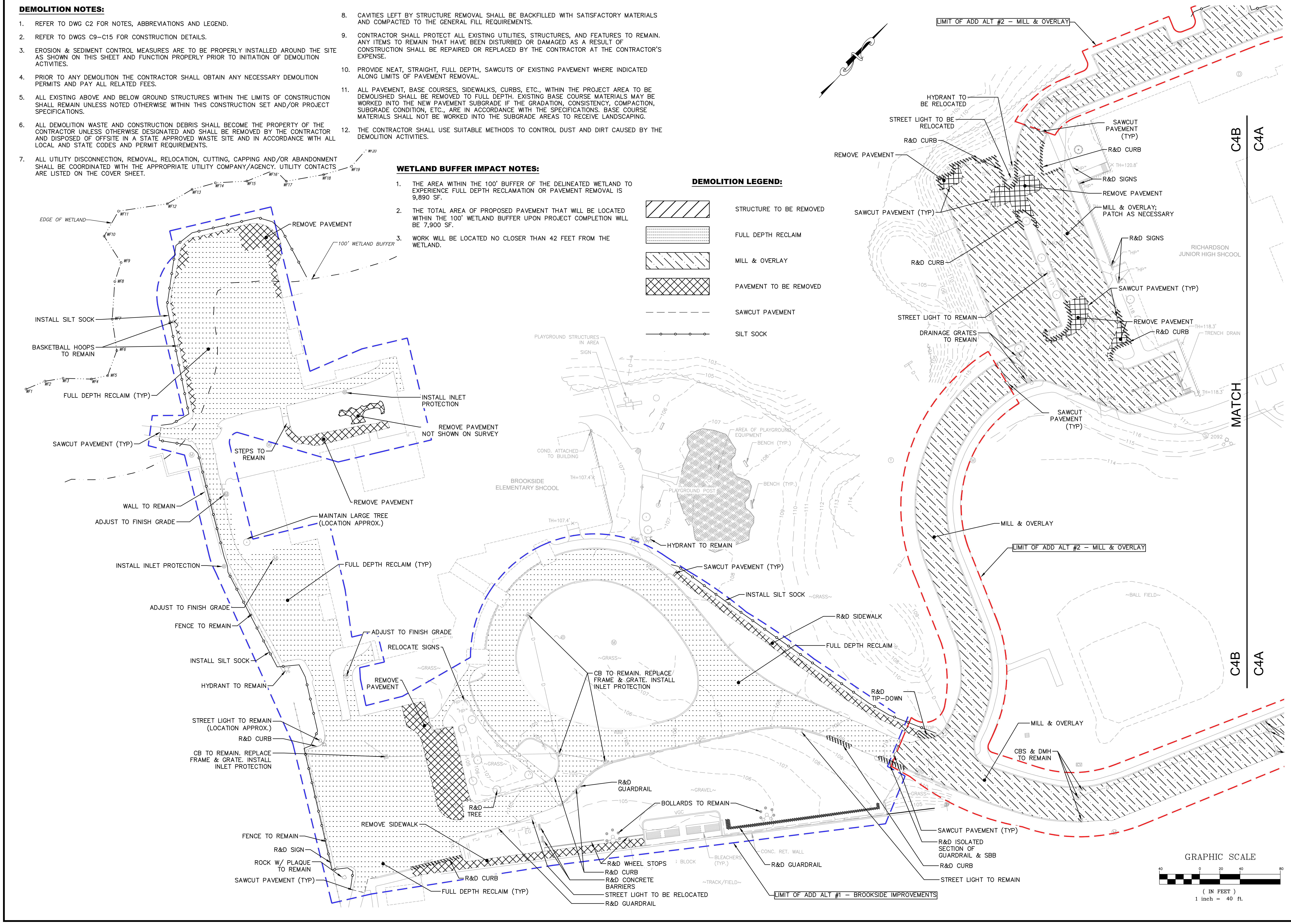
1. REFER TO DWG C2 FOR NOTES, ABBREVIATIONS AND LEGEND.
2. REFER TO DWGS C9–C15 FOR CONSTRUCTION DETAILS.
3. EROSION & SEDIMENT CONTROL MEASURES ARE TO BE PROPERLY INSTALLED AROUND THE SITE AS SHOWN ON THIS SHEET AND FUNCTION PROPERLY PRIOR TO INITIATION OF DEMOLITION ACTIVITIES.
4. PRIOR TO ANY DEMOLITION THE CONTRACTOR SHALL OBTAIN ANY NECESSARY DEMOLITION PERMITS AND PAY ALL RELATED FEES.
5. ALL EXISTING ABOVE AND BELOW GROUND STRUCTURES WITHIN THE LIMITS OF CONSTRUCTION SHALL REMAIN UNLESS NOTED OTHERWISE WITHIN THIS CONSTRUCTION SET AND/OR PROJECT SPECIFICATIONS.
6. ALL DEMOLITION WASTE AND CONSTRUCTION DEBRIS SHALL BECOME THE PROPERTY OF THE CONTRACTOR UNLESS OTHERWISE DESIGNATED AND SHALL BE REMOVED BY THE CONTRACTOR AND DISPOSED OF OFFSITE IN A STATE APPROVED WASTE SITE AND IN ACCORDANCE WITH ALL LOCAL AND STATE CODES AND PERMIT REQUIREMENTS.
7. ALL UTILITY DISCONNECTION, REMOVAL, RELOCATION, CUTTING, CAPPING AND/OR ABANDONMENT SHALL BE COORDINATED WITH THE APPROPRIATE UTILITY COMPANY/AGENCY. UTILITY CONTACTS ARE LISTED ON THE COVER SHEET.
8. CAVITIES LEFT BY STRUCTURE REMOVAL SHALL BE BACKFILLED WITH SATISFACTORY MATERIALS AND COMPACTED TO THE GENERAL FILL REQUIREMENTS.
9. CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES, STRUCTURES, AND FEATURES TO REMAIN. ANY ITEMS TO REMAIN THAT HAVE BEEN DISTURBED OR DAMAGED AS A RESULT OF CONSTRUCTION SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.
10. PROVIDE NEAT, STRAIGHT, FULL DEPTH, SAWCUTS OF EXISTING PAVEMENT WHERE INDICATED ALONG LIMITS OF PAVEMENT REMOVAL.
11. ALL PAVEMENT, BASE COURSES, SIDEWALKS, CURBS, ETC., WITHIN THE PROJECT AREA TO BE DEMOLISHED SHALL BE REMOVED TO FULL DEPTH. EXISTING BASE COURSE MATERIALS MAY BE WORKED INTO THE NEW PAVEMENT SUBGRADE IF THE GRADATION, CONSISTENCY, COMPACTION, SUBGRADE CONDITION, ETC., ARE IN ACCORDANCE WITH THE SPECIFICATIONS. BASE COURSE MATERIALS SHALL NOT BE WORKED INTO THE SUBGRADE AREAS TO RECEIVE LANDSCAPING.
12. THE CONTRACTOR SHALL USE SUITABLE METHODS TO CONTROL DUST AND DIRT CAUSED BY THE DEMOLITION ACTIVITIES.

WETLAND BUFFER IMPACT NOTES:

1. THE AREA WITHIN THE 100' BUFFER OF THE DELINEATED WETLAND TO EXPERIENCE FULL DEPTH RECLAMATION OR PAVEMENT REMOVAL IS 9,890 SF.
2. THE TOTAL AREA OF PROPOSED PAVEMENT THAT WILL BE LOCATED WITHIN THE 100' WETLAND BUFFER UPON PROJECT COMPLETION WILL BE 7,900 SF.
3. WORK WILL BE LOCATED NO CLOSER THAN 42 FEET FROM THE WETLAND.

DEMOLITION LEGEND:

▨	STRUCTURE TO BE REMOVED
░	FULL DEPTH RECLAIM
▧	MILL & OVERLAY
▩	PAVEMENT TO BE REMOVED
– – – –	SAWCUT PAVEMENT
–o–o–o–	SILT SOCK



WILLIAM R. DAVIDSON CIVIL NO. 50038

04/19/22

REV.	REVISION DESCRIPTION	DATE
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1	50% DESIGN REVIEW SUBMISSION	02/11/22

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SCALE: AS SHOWN

ORIGINAL DATE: FEBRUARY 11, 2022

CLIENT

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PROJECT

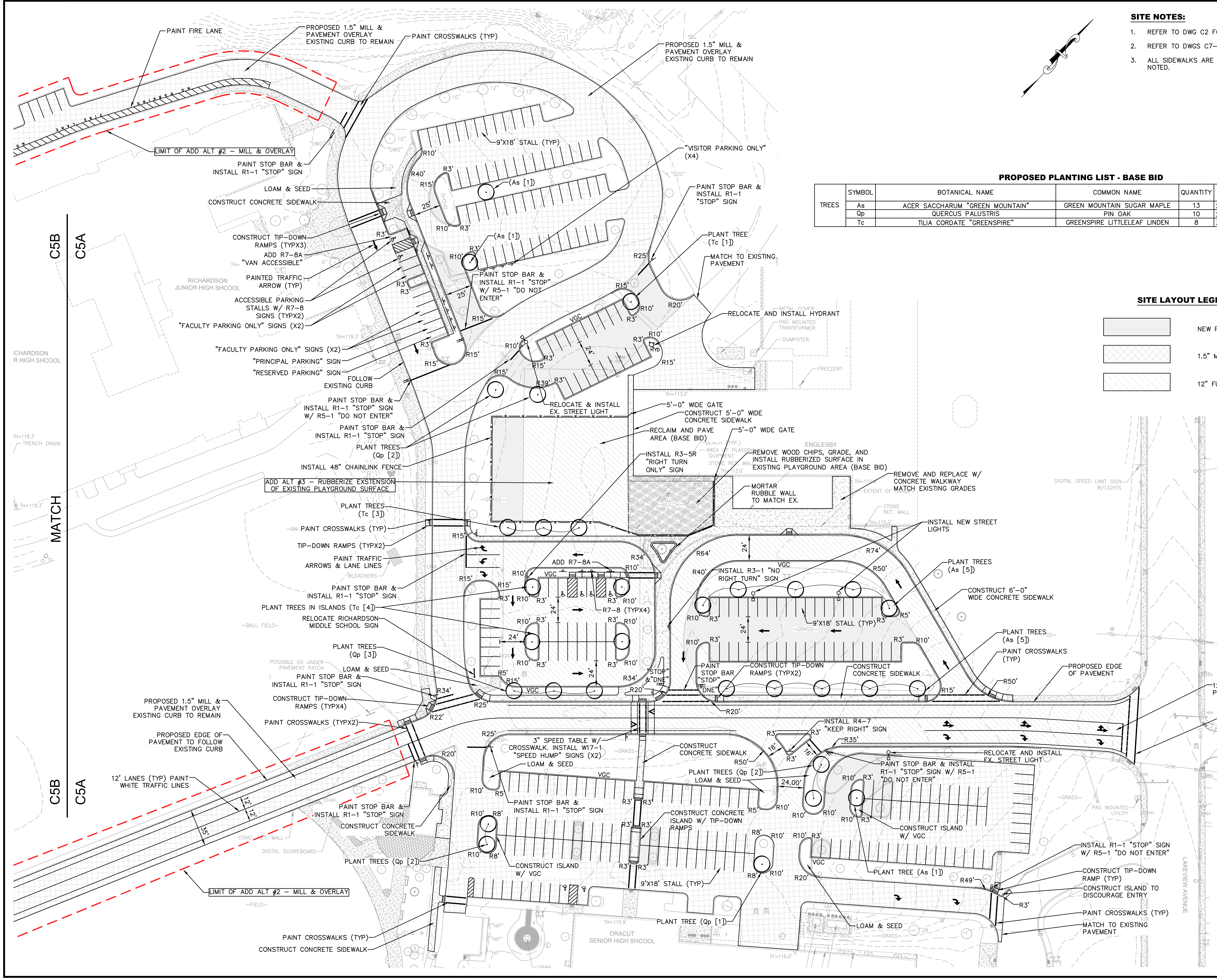
PEDESTRIAN SAFETY & TRAFFIC
CIRCULATION IMPROVEMENT PROJECT
DRACUT PUBLIC SCHOOLS

SITE PREP, DEMO & EROSION CONTROL PLAN B

C4B

PROJECT NO. 21.926301.00

SHEET 6 OF 16


PAINT FIRE LANE
PROPOSED 1.5" MILL & PAVEMENT OVERLAY EXISTING CURB TO REMAIN
PAINT CROSSWALKS (TYP)
PROPOSED 1.5" MILL & PAVEMENT OVERLAY EXISTING CURB TO REMAIN
LIMIT OF ADD ALT #2 – MILL & OVERLAY
9'X18' STALL (TYP)
"VISITOR PARKING ONLY" (X4)
PAINT STOP BAR & INSTALL R1-1 "STOP" SIGN
LOAM & SEED
CONSTRUCT CONCRETE SIDEWALK
PAINT STOP BAR & INSTALL R1-1 "STOP" SIGN
CONSTRUCT TIP-DOWN RAMPS (TYPX3)
ADD R7-8A "VAN ACCESSIBLE"
PAINTED TRAFFIC ARROW (TYP)
ACCESSIBLE PARKING STALLS W/ R7-8 SIGNS (TYPX2)
"FACULTY PARKING ONLY" SIGNS (X2)
PAINT STOP BAR & INSTALL R1-1 "STOP" W/ R5-1 "DO NOT ENTER"
PLANT TREE (Tc [1])
MATCH TO EXISTING PAVEMENT
RELOCATE AND INSTALL HYDRANT
RICHARDSON JUNIOR HIGH SHCOOL
"FACULTY PARKING ONLY" SIGNS (X2)
"PRINCIPAL PARKING" SIGN
"RESERVED PARKING" SIGN
FOLLOW EXISTING CURB
PAINT STOP BAR & INSTALL R1-1 "STOP" SIGN W/ R5-1 "DO NOT ENTER"
PAINT STOP BAR & INSTALL R1-1 "STOP" SIGN
PLANT TREES (Qp [2])
INSTALL 48" CHAINLINK FENCE
ADD ALT #3 – RUBBERIZE EXSTENSION OF EXISTING PLAYGROUND SURFACE
RELOCATE & INSTALL EX. STREET LIGHT
5'-0" WIDE GATE
CONSTRUCT 5'-0" WIDE CONCRETE SIDEWALK
RECLAIM AND PAVE AREA (BASE BID)
5'-0" WIDE GATE
INSTALL R3-5R "RIGHT TURN ONLY" SIGN
REMOVE WOOD CHIPS, GRADE, AND INSTALL RUBBERIZED SURFACE IN EXISTING PLAYGROUND AREA (BASE BID)
ENGLESBY
REMOVE AND REPLACE W/ CONCRETE WALKWAY MATCH EXISTING GRADES
MORTAR RUBBLE WALL TO MATCH EX.
MATCH
C5B
C5A
PLANT TREES (Tc [3])
PAINT CROSSWALKS (TYP)
TIP-DOWN RAMPS (TYPX2)
PAINT TRAFFIC ARROWS & LANE LINES
PAINT STOP BAR & INSTALL R1-1 "STOP" SIGN
PLANT TREES IN ISLANDS (Tc [4])
RELOCATE RICHARDSON MIDDLE SCHOOL SIGN
PLANT TREES (Qp [3])
LOAM & SEED
PAINT STOP BAR & INSTALL R1-1 "STOP" SIGN
CONSTRUCT TIP-DOWN RAMPS (TYPX4)
PAINT CROSSWALKS (TYPX2)
ADD R7-8A
R7-8 (TYPX4)
INSTALL NEW STREET LIGHTS
INSTALL R3-1 "NO RIGHT TURN" SIGN
PLANT TREES (As [5])
CONSTRUCT 6'-0" WIDE CONCRETE SIDEWALK
9'X18' STALL (TYP)
PLANT TREES (As [5])
PAINT CROSSWALKS (TYP)
PROPOSED EDGE OF PAVEMENT
PAINT STOP BAR "STOP" "DNE"
CONSTRUCT TIP-DOWN RAMPS (TYPX2)
CONSTRUCT CONCRETE SIDEWALK
12' LANES TYP. PAINT WHITE TRAFFIC MARKINGS
PAINT STOP BAR & CROSSWALK
PROPOSED 1.5" MILL & PAVEMENT OVERLAY EXISTING CURB TO REMAIN
PROPOSED EDGE OF PAVEMENT TO FOLLOW EXISTING CURB
12' LANES (TYP) PAINT WHITE TRAFFIC LINES
3" SPEED TABLE W/ CROSSWALK. INSTALL W17-1 "SPEED HUMP" SIGNS (X2)
LOAM & SEED
CONSTRUCT CONCRETE SIDEWALK
INSTALL R4-7 "KEEP RIGHT" SIGN
RELOCATE AND INSTALL EX. STREET LIGHT
PAINT STOP BAR & INSTALL R1-1 "STOP" SIGN W/ R5-1 "DO NOT ENTER"
PLANT TREES (Qp [2])
LOAM & SEED
PAINT STOP BAR & INSTALL R1-1 "STOP" SIGN
PAINT STOP BAR & INSTALL R1-1 "STOP" SIGN
CONSTRUCT CONCRETE SIDEWALK
CONSTRUCT CONCRETE ISLAND W/ TIP-DOWN RAMPS
CONSTRUCT ISLAND W/ VGC
PLANT TREES (Qp [2])
CONSTRUCT ISLAND W/ VGC
9'X18' STALL (TYP)
PLANT TREE (As [1])
PLANT TREE (Qp [1])
LIMIT OF ADD ALT #2 – MILL & OVERLAY
INSTALL R1-1 "STOP" SIGN W/ R5-1 "DO NOT ENTER"
CONSTRUCT TIP-DOWN RAMP (TYP)
CONSTRUCT ISLAND TO DISCOURAGE ENTRY
PAINT CROSSWALKS (TYP)
MATCH TO EXISTING PAVEMENT
LOAM & SEED
PAINT CROSSWALKS (TYP)
CONSTRUCT CONCRETE SIDEWALK
LITCHFIELD AVENUE
LAKEVIEW AVENUE
DRACUT SENIOR HIGH SHCOOL
24.00'
24'
35'
12'

SITE NOTES:

1. REFER TO DWG C2 FOR NOTES, ABBREVIATIONS AND LEGEND.
2. REFER TO DWGS C7–C12 FOR CONSTRUCTION DETAILS.
3. ALL SIDEWALKS ARE TO BE CONCRETE UNLESS OTHERWISE NOTED.

PROPOSED PLANTING LIST - BASE BID

	SYMBOL	BOTANICAL NAME	COMMON NAME	QUANTITY	SIZE	COMMENTS
TREES	As	ACER SACCHARUM "GREEN MOUNTAIN"	GREEN MOUNTAIN SUGAR MAPLE	13	2.5–3" CAL.	B&B
	Qp	QUERCUS PALUSTRIS	PIN OAK	10	2.5–3" CAL.	B&B
	Tc	TILIA CORDATE "GREENSPIRE"	GREENSPIRE LITTLELEAF LINDEN	8	3–3.5" CAL.	B&B

SITE LAYOUT LEGEND

▩	NEW PAVEMENT SECTION W/ GRAVELS
▨	1.5" MILLING & PAVEMENT OVERLAY
▤	12" FULL DEPTH RECLAIM

GRAPHIC SCALE
40 0 20 40 80
(IN FEET)
1 inch = 40 ft.

WILLIAM R. DAVIDSON CIVIL NO. 50038
04/19/22

REV.	REVISION DESCRIPTION	DATE
2	100% DESIGN PLANS ISSUED FOR BIDDING	04/19/22
1	50% DESIGN REVIEW SUBMISSION	02/11/22

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62 ARLINGTON STREET
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PROJECT
PEDESTRIAN SAFETY & TRAFFIC
CIRCULATION IMPROVEMENT PROJECT
DRACUT PUBLIC SCHOOLS

SITE LAYOUT PLAN
A

C5A

PROJECT NO. 21.926301.00

SHEET 7 OF 16

SITE NOTES:

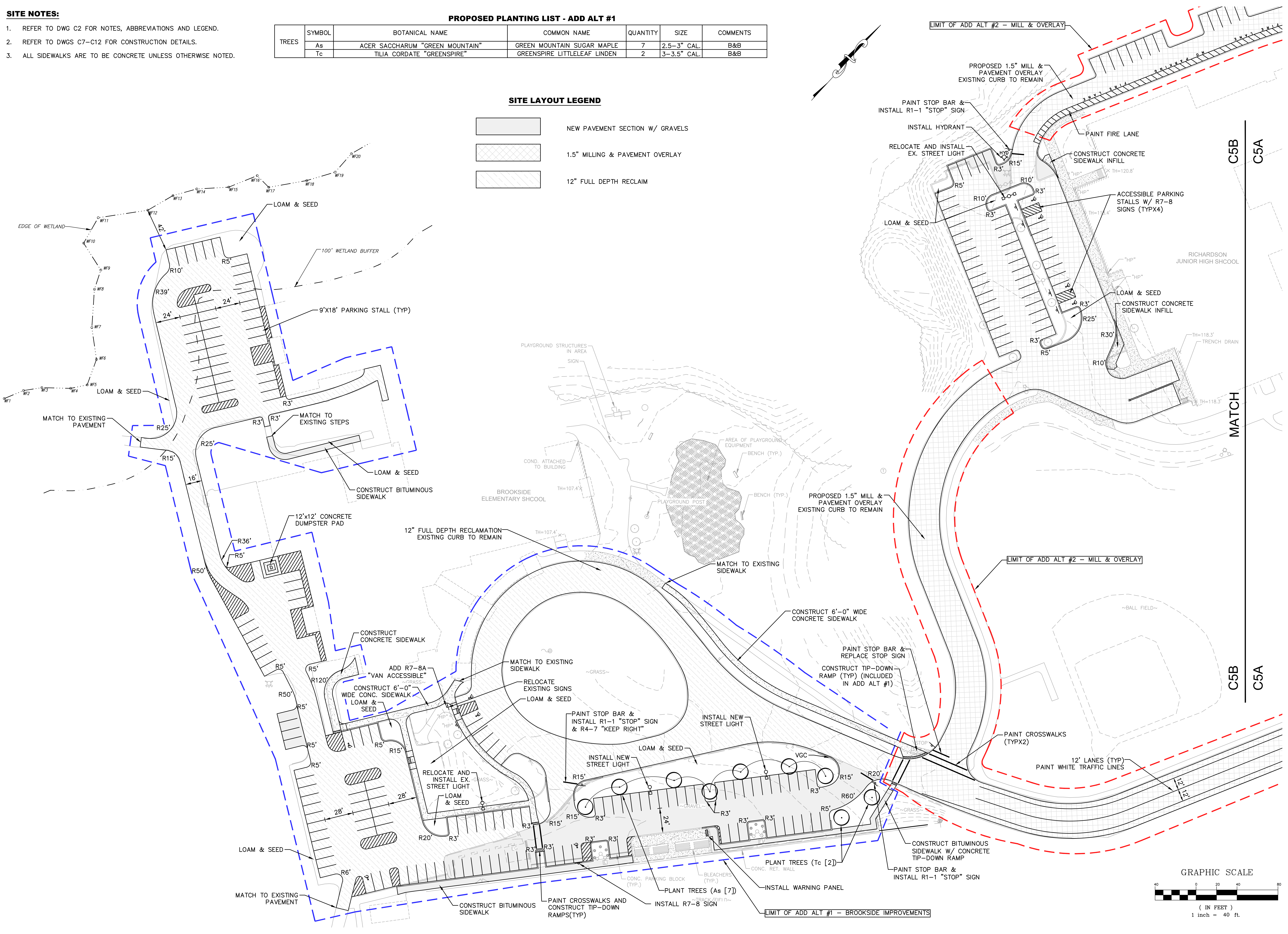
1. REFER TO DWG C2 FOR NOTES, ABBREVIATIONS AND LEGEND.
2. REFER TO DWGS C7–C12 FOR CONSTRUCTION DETAILS.
3. ALL SIDEWALKS ARE TO BE CONCRETE UNLESS OTHERWISE NOTED.

PROPOSED PLANTING LIST - ADD ALT #1

	SYMBOL	BOTANICAL NAME	COMMON NAME	QUANTITY	SIZE	COMMENTS
TREES	As	ACER SACCHARUM "GREEN MOUNTAIN"	GREEN MOUNTAIN SUGAR MAPLE	7	2.5–3" CAL.	B&B
	Tc	TILIA CORDATE "GREENSPIRE"	GREENSPIRE LITTLELEAF LINDEN	2	3–3.5" CAL.	B&B

SITE LAYOUT LEGEND

▨	NEW PAVEMENT SECTION W/ GRAVELS
▨	1.5" MILLING & PAVEMENT OVERLAY
▨	12" FULL DEPTH RECLAIM


LIMIT OF ADD ALT #2 – MILL & OVERLAY
PROPOSED 1.5" MILL & PAVEMENT OVERLAY EXISTING CURB TO REMAIN
PAINT STOP BAR & INSTALL R1-1 "STOP" SIGN
INSTALL HYDRANT
RELOCATE AND INSTALL EX. STREET LIGHT
PAINT FIRE LANE
CONSTRUCT CONCRETE SIDEWALK INFILL
ACCESSIBLE PARKING STALLS W/ R7-8 SIGNS (TYPX4)
LOAM & SEED
CONSTRUCT CONCRETE SIDEWALK INFILL
RICHARDSON JUNIOR HIGH SHCOOL
TRENCH DRAIN
C5B
C5A
MATCH
EDGE OF WETLAND
100' WETLAND BUFFER
LOAM & SEED
9'X18' PARKING STALL (TYP)
MATCH TO EXISTING PAVEMENT
MATCH TO EXISTING STEPS
LOAM & SEED
CONSTRUCT BITUMINOUS SIDEWALK
12'x12' CONCRETE DUMPSTER PAD
PLAYGROUND STRUCTURES IN AREA
AREA OF PLAYGROUND EQUIPMENT
BENCH (TYP.)
COND. ATTACHED TO BUILDING
BROOKSIDE ELEMENTARY SHCOOL
PLAYGROUND POST
12" FULL DEPTH RECLAMATION EXISTING CURB TO REMAIN
MATCH TO EXISTING SIDEWALK
PROPOSED 1.5" MILL & PAVEMENT OVERLAY EXISTING CURB TO REMAIN
LIMIT OF ADD ALT #2 – MILL & OVERLAY
BALL FIELD
CONSTRUCT 6'-0" WIDE CONCRETE SIDEWALK
CONSTRUCT CONCRETE SIDEWALK
ADD R7-8A "VAN ACCESSIBLE"
CONSTRUCT 6'-0" WIDE CONC. SIDEWALK
LOAM & SEED
MATCH TO EXISTING SIDEWALK
RELOCATE EXISTING SIGNS
LOAM & SEED
GRASS
PAINT STOP BAR & REPLACE STOP SIGN
CONSTRUCT TIP-DOWN RAMP (TYP) (INCLUDED IN ADD ALT #1)
PAINT STOP BAR & INSTALL R1-1 "STOP" SIGN & R4-7 "KEEP RIGHT"
INSTALL NEW STREET LIGHT
INSTALL NEW STREET LIGHT
LOAM & SEED
VGC
RELOCATE AND INSTALL EX. STREET LIGHT
LOAM & SEED
PAINT CROSSWALKS (TYPX2)
12' LANES (TYP) PAINT WHITE TRAFFIC LINES
CONSTRUCT BITUMINOUS SIDEWALK W/ CONCRETE TIP-DOWN RAMP
PAINT STOP BAR & INSTALL R1-1 "STOP" SIGN
PLANT TREES (Tc [2])
CONC. RET. WALL
CONC. PARKING BLOCK (TYP.)
BLEACHERS (TYP.)
PLANT TREES (As [7])
INSTALL WARNING PANEL
INSTALL R7-8 SIGN
TRACK/FIELD
LIMIT OF ADD ALT #1 – BROOKSIDE IMPROVEMENTS
LOAM & SEED
MATCH TO EXISTING PAVEMENT
CONSTRUCT BITUMINOUS SIDEWALK
PAINT CROSSWALKS AND CONSTRUCT TIP-DOWN RAMPS(TYP)
GRAPHIC SCALE
40 0 20 40 80
(IN FEET)
1 inch = 40 ft.

COMMONWEALTH OF MASSACHUSETTS
WILLIAM R. DAVIDSON
CIVIL
NO. 50036
REGISTERED PROFESSIONAL ENGINEER
04/19/22

REV.	REVISION DESCRIPTION	DATE
2	100% DESIGN PLANS ISSUED FOR BIDDING	04/19/22
1	50% DESIGN REVIEW SUBMISSION	02/11/22

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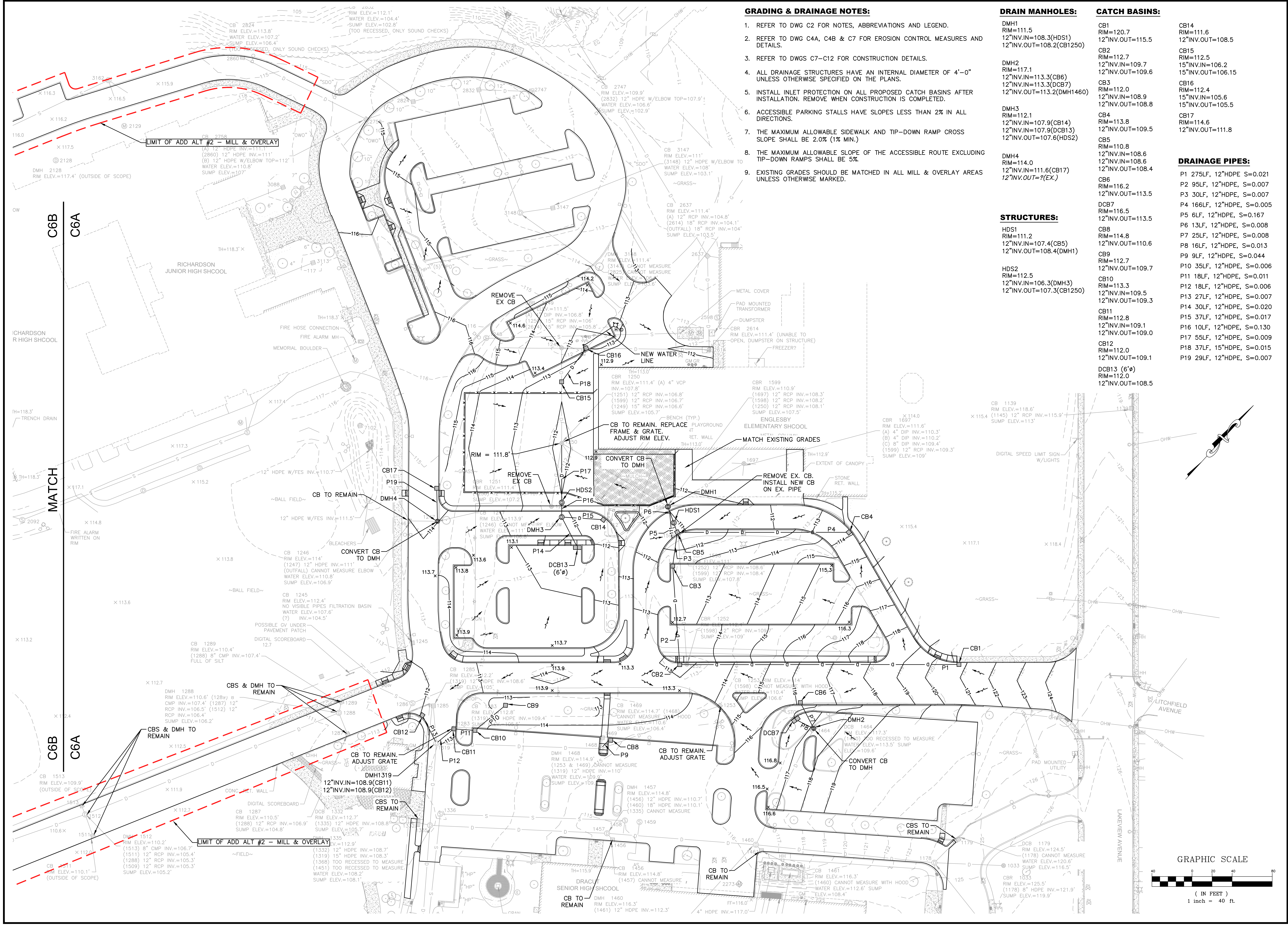
CIRCULATION IMPROVEMENT PROJECT
DRACUT PUBLIC SCHOOLS

SITE LAYOUT PLAN
B

C5B

PROJECT NO. 21.926301.00

SHEET 8 OF 16



GRADING & DRAINAGE NOTES:

1. REFER TO DWG C2 FOR NOTES, ABBREVIATIONS AND LEGEND.
2. REFER TO DWG C4A, C4B & C7 FOR EROSION CONTROL MEASURES AND DETAILS.
3. REFER TO DWGS C7–C12 FOR CONSTRUCTION DETAILS.
4. ALL DRAINAGE STRUCTURES HAVE AN INTERNAL DIAMETER OF 4'–0" UNLESS OTHERWISE SPECIFIED ON THE PLANS.
5. INSTALL INLET PROTECTION ON ALL PROPOSED CATCH BASINS AFTER INSTALLATION. REMOVE WHEN CONSTRUCTION IS COMPLETED.
6. ACCESSIBLE PARKING STALLS HAVE SLOPES LESS THAN 2% IN ALL DIRECTIONS.
7. THE MAXIMUM ALLOWABLE SIDEWALK AND TIP–DOWN RAMP CROSS SLOPE SHALL BE 2.0% (1% MIN.)
8. THE MAXIMUM ALLOWABLE SLOPE OF THE ACCESSIBLE ROUTE EXCLUDING TIP–DOWN RAMPS SHALL BE 5%.
9. EXISTING GRADES SHOULD BE MATCHED IN ALL MILL & OVERLAY AREAS UNLESS OTHERWISE MARKED.

DRAIN MANHOLES:

DMH1
RIM=111.5
12"INV.IN=108.3(HDS1)
12"INV.OUT=108.2(CB1250)

DMH2
RIM=117.1
12"INV.IN=113.3(CB6)
12"INV.IN=113.3(DCB7)
12"INV.OUT=113.2(DMH1460)

DMH3
RIM=112.1
12"INV.IN=107.9(CB14)
12"INV.IN=107.9(DCB13)
12"INV.OUT=107.6(HDS2)

DMH4
RIM=114.0
12"INV.IN=111.6(CB17)
12"INV.OUT=?(EX.)

STRUCTURES:

HDS1
RIM=111.2
12"INV.IN=107.4(CB5)
12"INV.OUT=108.4(DMH1)

HDS2
RIM=112.5
12"INV.IN=106.3(DMH3)
12"INV.OUT=107.3(CB1250)

CATCH BASINS:

CB1
RIM=120.7
12"INV.OUT=115.5

CB2
RIM=112.7
12"INV.IN=109.7
12"INV.OUT=109.6

CB3
RIM=112.0
12"INV.IN=108.9
12"INV.OUT=108.8

CB4
RIM=113.8
12"INV.OUT=109.5

CB5
RIM=110.8
12"INV.IN=108.6
12"INV.IN=108.6
12"INV.OUT=108.4

CB6
RIM=116.2
12"INV.OUT=113.5

DCB7
RIM=116.5
12"INV.OUT=113.5

CB8
RIM=114.8
12"INV.OUT=110.6

CB9
RIM=112.7
12"INV.OUT=109.7

CB10
RIM=113.3
12"INV.IN=109.5
12"INV.OUT=109.3

CB11
RIM=112.8
12"INV.IN=109.1
12"INV.OUT=109.0

CB12
RIM=112.0
12"INV.OUT=109.1

DCB13 (6'ø)
RIM=112.0
12"INV.OUT=108.5

CB14
RIM=111.6
12"INV.OUT=108.5

CB15
RIM=112.5
15"INV.IN=106.2
15"INV.OUT=106.15

CB16
RIM=112.4
15"INV.IN=105.6
15"INV.OUT=105.5

CB17
RIM=114.6
12"INV.OUT=111.8

DRAINAGE PIPES:

P1 275LF, 12"HDPE S=0.021
P2 95LF, 12"HDPE, S=0.007
P3 30LF, 12"HDPE, S=0.007
P4 166LF, 12"HDPE, S=0.005
P5 6LF, 12"HDPE, S=0.167
P6 13LF, 12"HDPE, S=0.008
P7 25LF, 12"HDPE, S=0.008
P8 16LF, 12"HDPE, S=0.013
P9 9LF, 12"HDPE, S=0.044
P10 35LF, 12"HDPE, S=0.006
P11 18LF, 12"HDPE, S=0.011
P12 18LF, 12"HDPE, S=0.006
P13 27LF, 12"HDPE, S=0.007
P14 30LF, 12"HDPE, S=0.020
P15 37LF, 12"HDPE, S=0.017
P16 10LF, 12"HDPE, S=0.130
P17 55LF, 12"HDPE, S=0.009
P18 37LF, 15"HDPE, S=0.015
P19 29LF, 12"HDPE, S=0.007

WILLIAM R. DAVIDSON
CIVIL
NO. 50038

04/19/22

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CIRCULATION IMPROVEMENT PROJECT
DRACUT PUBLIC SCHOOLS

GRADING & DRAINAGE PLAN A

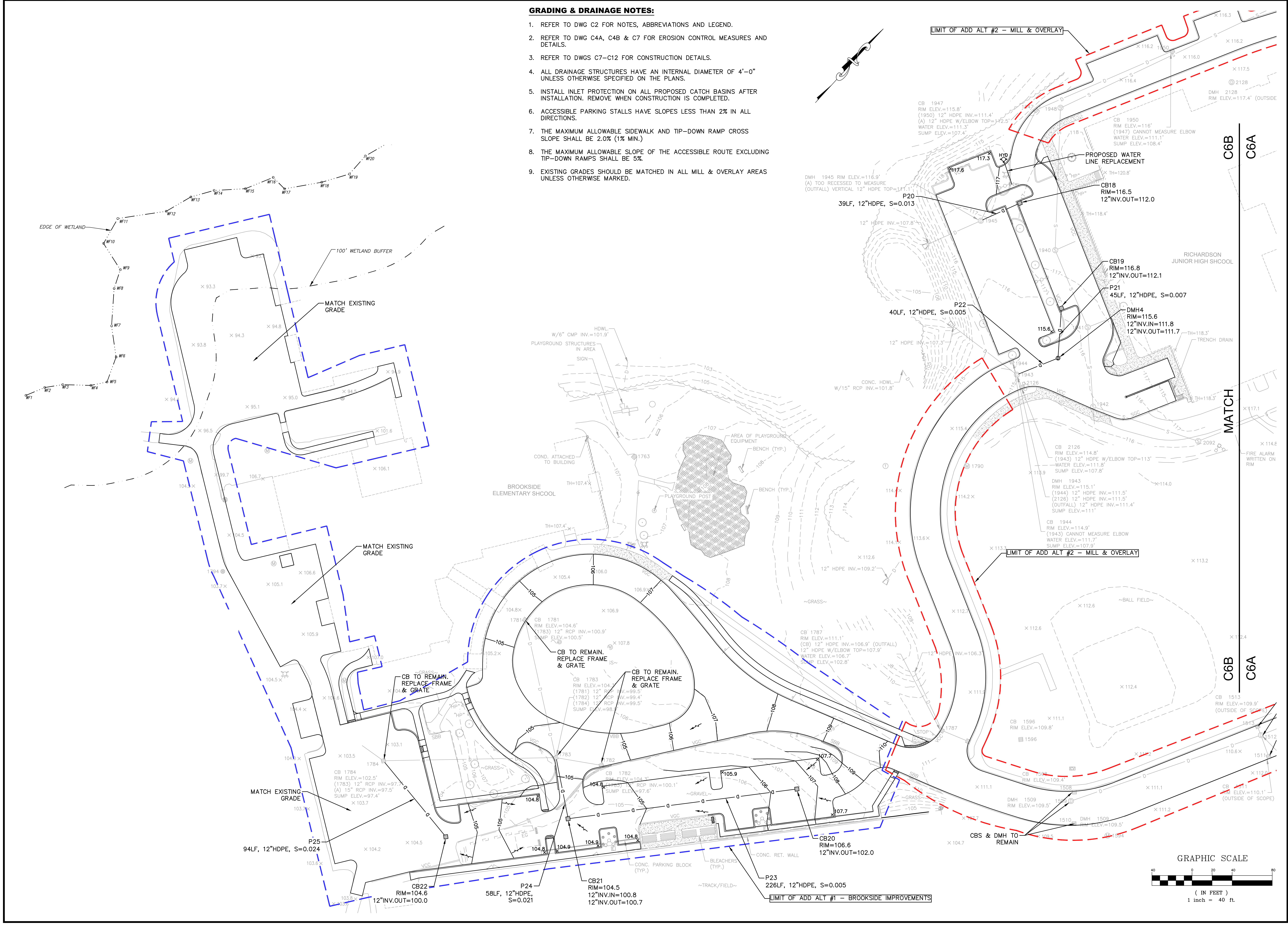
C6A

PROJECT NO. 21.926301.00

SHEET 9 OF 16

GRADING & DRAINAGE NOTES:

1. REFER TO DWG C2 FOR NOTES, ABBREVIATIONS AND LEGEND.
2. REFER TO DWG C4A, C4B & C7 FOR EROSION CONTROL MEASURES AND DETAILS.
3. REFER TO DWGS C7–C12 FOR CONSTRUCTION DETAILS.
4. ALL DRAINAGE STRUCTURES HAVE AN INTERNAL DIAMETER OF 4'–0" UNLESS OTHERWISE SPECIFIED ON THE PLANS.
5. INSTALL INLET PROTECTION ON ALL PROPOSED CATCH BASINS AFTER INSTALLATION. REMOVE WHEN CONSTRUCTION IS COMPLETED.
6. ACCESSIBLE PARKING STALLS HAVE SLOPES LESS THAN 2% IN ALL DIRECTIONS.
7. THE MAXIMUM ALLOWABLE SIDEWALK AND TIP–DOWN RAMP CROSS SLOPE SHALL BE 2.0% (1% MIN.)
8. THE MAXIMUM ALLOWABLE SLOPE OF THE ACCESSIBLE ROUTE EXCLUDING TIP–DOWN RAMPS SHALL BE 5%.
9. EXISTING GRADES SHOULD BE MATCHED IN ALL MILL & OVERLAY AREAS UNLESS OTHERWISE MARKED.



04/19/22

REV.	REVISION DESCRIPTION	DATE
2	100% DESIGN PLANS ISSUED FOR BIDDING	04/19/22
1	50% DESIGN REVIEW SUBMISSION	02/11/22

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DESIGNED BY	DRAWN BY	CHECKED BY
SMT/JCH	JCH/SCR	WRD

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SCALE: AS SHOWN

ORIGINAL DATE: FEBRUARY 11, 2022

CLIENT
TOWN OF DRACUT
62 ARLINGTON STREET
DRACUT, MA 01826

PROJECT
PEDESTRIAN SAFETY & TRAFFIC
CIRCULATION IMPROVEMENT PROJECT
DRACUT PUBLIC SCHOOLS

GRADING & DRAINAGE PLAN B

C6B

PROJECT NO. 21.926301.00

SHEET 10 OF 16

EROSION CONTROL NOTES:

A. GENERAL NOTES

1. DURING CONSTRUCTION, AND THEREAFTER, EROSION CONTROL MEASURES ARE TO BE IMPLEMENTED AS NOTED. THE SMALLEST PRACTICAL AREA OF LAND (5 ACRES MAXIMUM) SHOULD BE EXPOSED AT ANY ONE TIME DURING DEVELOPMENT. WHEN LAND IS EXPOSED DURING DEVELOPMENT, THE EXPOSURE SHOULD BE KEPT TO A MAXIMUM OF 72 HOURS BEFORE APPLYING TEMPORARY OR PERMANENT EROSION CONTROL MEASURES. CONFINE PERIOD OF DISTURBED AND UNSTABILIZED SOILS TO A MAXIMUM OF 45 DAYS. ALL DITCHES AND SWALES ARE REQUIRED TO BE STABILIZED PRIOR TO DIRECT RECEIPT OF ANY FLOW.

2. ALL ROADWAYS AND PARKING LOTS SHALL BE STABILIZES WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE. ALL CUT AND FILL SLOPES SHALL BE LOAMED AND SEEDED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.

3. PERIMETER CONTROLS SHALL BE INSTALLED PRIOR TO EARTH MOVING OPERATIONS. INSTALL SILT FENCE WHERE SHOWN AND AROUND ALL EXISTING DRAINAGE STRUCTURES TO PROJECT. DO NOT REMOVE SILT BARRIERS UNTIL DISTURBED AREAS ARE FULLY COVERED WITH TURF OR OTHER APPLICABLE SURFACE MATERIAL. ALL STORMWATER STRUCTURES ARE TO BE CONSTRUCTED AND STABILIZED PRIOR TO ANY OTHER DRAINAGE SYSTEM WORK, INCLUDING DITCH AND SWALE EXCAVATION.

4. EROSION AND SEDIMENT CONTROL PRACTICES INCLUDE THE USE OF THE FOLLOWING: SILT FENCE BARRIERS, TEMPORARY SEDIMENTATION POND BASINS, GRASS AND/OR ROCK LINED SWALES AND DIVERSIONS WITH LEVEL SPREADERS. ALL EROSION CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS CONTAINED IN THE "MASSACHUSETTS STORMWATER HANDBOOK"..

5. CONSTRUCTION AREAS SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
   a. BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED.
   b. A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED.
   c. A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIPRAP HAS BEEN INSTALLED.
   d. OR, EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.

B. VEGETATIVE MEASURES

1. TOPSOIL STOCKPILING: TOPSOIL SHALL BE STRIPPED AND STOCKPILED FOR LATER USE ON CRITICAL AREAS AND ALL OTHER AREAS TO BE SEEDED. THE STOCKPILE WILL NOT BE COMPACTED AND SHALL BE STABILIZED AGAINST EROSION WITH TEMPORARY SEEDING.

2. TEMPORARY SEEDING:

   a. BEDDING – REMOVE STONES AND TRASH THAT WILL INTERFERE WITH SEEDING THE AREA. WHERE FEASIBLE, TILL THE SOIL TO A DEPTH OF ABOUT 3" TO PREPARE SEED BED AND MIX THE FERTILIZER INTO THE SOIL.

   b. FERTILIZER – FERTILIZER SHOULD BE UNIFORMLY SPREAD OVER THE AREA PRIOR TO BEING TILLED INTO THE SOIL. A 10–10–10 MIX OF FERTILIZER SHOULD BE APPLIED AT A RATE OF 300 POUNDS PER ACRE (OR 7 POUNDS PER 1,000 S.F.).

   c. SEED MIXTURE – USE ANY OF THE FOLLOWING IN UPLAND AREAS:

TEMPORARY SEEDING RATES:

SPECIES	PER ACRE	PER 1,000S.F.	DATES	DEPTH
WINTER RYE	112 LBS.	2.5 LBS.	8/15–9/5	1 IN.
OATS	80 LBS.	2.0 LBS.	SPRING–5/15	1 IN.
ANNUAL RYEGRASS	40 LBS.	1.0 LBS.	4/15–9/15 WITH MULCH	.25 IN.
PERENNIAL RYEGRASS	30 LBS.	0.7 LBS.	4/1–6/1 AND/OR 8/15–9/15 W/MULCH	.5 IN.

   d. MULCHING – WHERE IT IS IMPRACTICAL TO INCORPORATE FERTILIZER AND SEED INTO MOIST SOIL, THE SEEDED AREA SHALL BE MULCHED TO FACILITATE GERMINATION. MULCH IN THE FORM OF STRAW SHOULD BE APPLIED AT A RATE OF 70 TO 90 LBS. PER 1,000 S.F.

3. PERMANENT SEEDING:

   a. BEDDING – STONES LARGER THAN 4", TRASH, ROOTS, AND OTHER DEBRIS THAT WILL INTERFERE WITH SEEDING AND FUTURE MAINTENANCE OF THE AREA SHOULD BE REMOVED. WHERE FEASIBLE, THE SOIL SHOULD BE TILLED TO A DEPTH OF 4" TO PREPARE A SEEDBED AND MIX FERTILIZER INTO THE SOIL.

   b. FERTILIZER – LIME AND FERTILIZER SHOULD BE APPLIED EVENLY OVER THE AREA PRIOR TO OR AT THE TIME OF SEEDING AND INCORPORATED INTO THE SOIL. KINDS AND AMOUNTS OF LIME AND FERTILIZER SHOULD BE BASED ON AN EVALUATION OF SOIL TESTS. WHEN A SOIL TEST IS NOT AVAILABLE, THE FOLLOWING MINIMUM AMOUNTS SHOULD BE APPLIED:

      AGRICULTURAL LIMESTONE @ 100 LBS. PER 1,000 S.F.
      10–20–20 FERTILIZER @ 12 LBS. PER 1,000 S.F.

   c. PERMANENT SEEDING MIXTURES (RECOMMENDED)

SPECIES	PER ACRE	PER 1,000S.F.	USE
KENTUCKY BLUEGRASS	50 LBS.	1.15 LBS.	LOAM AREAS (NON-SLOPE WORK)
CREEPING RED FESQUE	50 LBS.	1.15 LBS.	
TOTAL	100 LBS.	2.30 LBS.	

SPECIES	PER ACRE	PER 1,000S.F.	USE
TALL FESQUE	20 LBS.	.45 LBS.	ALL SLOPE WORK
CREEPING RED FESQUE	20 LBS.	.45 LBS.	
BIRDSFOOT TREFOIL	8 LBS.	.20 LBS.	
TOTAL	48 LBS.	1.10 LBS.	

SPECIES	PER ACRE	PER 1,000S.F.	USE
CREEPING BENT GRASS	35 LBS.	.80 LBS.	TREATMENT SWALES
RED TOP	35 LBS.	.80 LBS.	
TALL FESQUE	90 LBS.	2.00 LBS.	
TOTAL	160 LBS.	3.60 LBS.	

   d. MULCHING – MULCH SHOULD BE USED ON HIGHLY ERODIBLE SOILS, ON CRITICALLY ERODING AREAS, AND ON AREAS WHERE CONSERVATION OF MOISTURE WILL FACILITATE PLANT ESTABLISHMENT.

TYPE	RATE PER 1,000S.F.	USE AND COMMENTS
STRAW	70 TO 90 LBS.	MUST BE DRY AND FREE FROM MOLD. MAY BE USED WITH PLANTINGS
WOOD CHIPS OR BARK MULCH	460 TO 920 LBS.	USED MOSTLY WITH TREES AND SHRUB PLANTINGS
JUTE AND FIBROUS MATTING	AS PER MANUFACTURER SPECIFICATIONS	USED IN SLOPE AREAS, WATER COURSES AND OTHER AREAS
CRUSHED STONE 1/4" TO 1/2" DIA.	SPREAD MORE THAN 2" THICK	EFFECTIVE IN CONTROLLING WIND AND WATER EROSION.

   e. SODDING – SODDING IS DONE WHERE IT IS DESIRABLE TO RAPIDLY ESTABLISH COVER ON A DISTURBED AREA. SODDING AN AREA MAY BE SUBSTITUTED FOR PERMANENT SEEDING PROCEDURES ANYWHERE ON SITE. BED PREPARATION, FERTILIZING, AND PLACEMENT OF SOD SHALL BE PERFORMED ACCORDING TO THE S.C.S. HANDBOOK.

C. STRUCTURAL MEASURES

1. STRAW BALE BARRIERS/SILT SCREEN FENCES: STRAW BALE BARRIERS AND/OR SILT SCREEN FENCES ARE TO BE INSTALLED IN THE AREAS SHOWN ON THE PLAN. THEY ARE INTENDED PRIMARILY TO INTERCEPT AND FILTER SMALL VOLUMES OF "SHEET FLOWING" RUNOFF, OR AS SEDIMENT TRAPS IN SMALL SWALES. STRAW BALES HAVE A USEFUL LIFE OF 3 MONTHS WHEN WET, AND THEREFORE, MUST BE INSPECTED AND REPAIRED OR REPLACED PERIODICALLY. SILT SCREEN FENCES WILL FUNCTION 6 MONTHS OR LONGER IF KEPT FREE OF SEDIMENT ACCUMULATIONS (SEE DETAILS FOR ADDITIONAL INFORMATION).

2. SWALES: TEMPORARY AND/OR PERMANENT SWALES ARE TO BE INSTALLED AS SHOWN ON THE PLAN. SWALES ARE USED TO CONVERT SHEET FLOW TO CHANNEL FLOW AND CONVEY THE RUNOFF TO A PERMANENT CHANNEL, STORM DRAIN, OR DETENTION/SEDIMENT STRUCTURE. SWALES ARE INTENDED TO INTERCEPT RUNOFF AND DIVERT IT FROM AN EXPOSED NEWLY SEEDED SLOPE TOWARD AN ACCEPTABLE OUTLET OR TO REDUCE THE VELOCITY OF RUNOFF FLOWING DOWN FROM A DRAINAGE AREA.

3. A STABILIZED CONSTRUCTION ENTRANCE SHALL BE CONSTRUCTED OF 1.5 INCH STONE ACROSS THE FULL WIDTH OF THE VEHICLE INGRESS EGRESS AREA. THE STONE PAD SHOULD BE AT LEAST 50 FEET LONG, 25 FEET WIDE AND AT LEAST 6 INCHES THICK. ADDITIONAL STONE MAY HAVE TO BE ADDED PERIODICALLY TO MAINTAIN THE PROPER FUNCTIONING OF THE PAD.

4. CATCH BASIN SEDIMENT FILTER: STONE CATCH BASIN SEDIMENT FILTERS ARE TO BE INSTALLED IN THE AREAS SHOWN ON THE PLAN. THEY ARE INTENDED PRIMARILY TO FILTER SMALL VOLUMES OF "SHEET FLOWING" RUNOFF. CATCH BASIN SEDIMENT FILTERS SHALL BE CONSTRUCTED OF FILTER FABRIC BEING INSTALLED OVER INLET GRATE, AND 3/4" WASHED CRUSHED STONE, 12 INCHES THICK. CATCH BASIN SEDIMENT FILTERS WILL LAST LONGER IF KEPT FREE OF SEDIMENT ACCUMULATIONS (SEE DETAILS FOR ADDITIONAL INFORMATION).

D. MAINTENANCE

1. DURING THE PERIOD OF CONSTRUCTION AND/OR UNTIL LONG TERM VEGETATION IS ESTABLISHED:
   a. SEEDED AREAS WILL BE FERTILIZED AND WILL BE SEEDED AS NECESSARY TO INSURE VEGETATIVE ESTABLISHMENT.
   b. ADDITIONAL STONE MAY HAVE TO BE ADDED TO THE CONSTRUCTION ENTRANCE, ROCK LINED SWALES, ETC., PERIODICALLY TO MAINTAIN THE PROPER FUNCTIONING OF THE EROSION CONTROL STRUCTURE.
   c. ALL DIVERSION CHANNELS AND SWALES WILL BE CHECKED WEEKLY AND REPAIRED WHEN NECESSARY UNTIL ADEQUATE VEGETATION IS ESTABLISHED.
   d. ALL SILT SCREEN FENCES WILL BE CHECKED WEEKLY. NECESSARY REPAIRS WILL BE MADE TO CORRECT UNDERMINING OR DETERIORATION OF THE BARRIER.
   e. EROSION CONTROL MEASURES TO BE INSPECTED WEEKLY AND AFTER EVERY 0.5" OF RAINFALL.

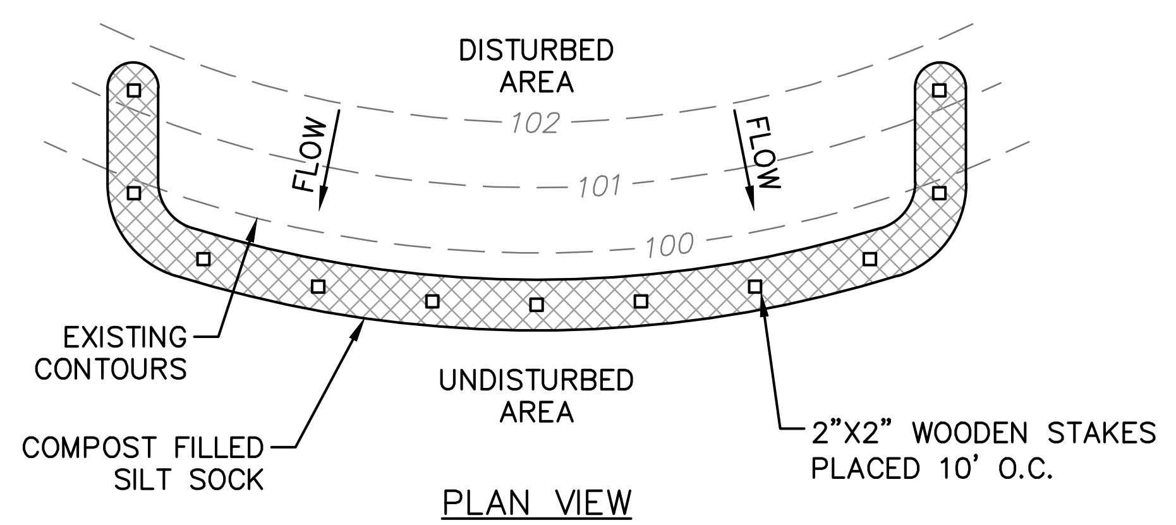
2. SEE CONSTRUCTION DETAILS FOR ADDITIONAL NOTES AND EROSION CONTROL MAINTENANCE MEASURES.

E. WINTER CONSTRUCTION

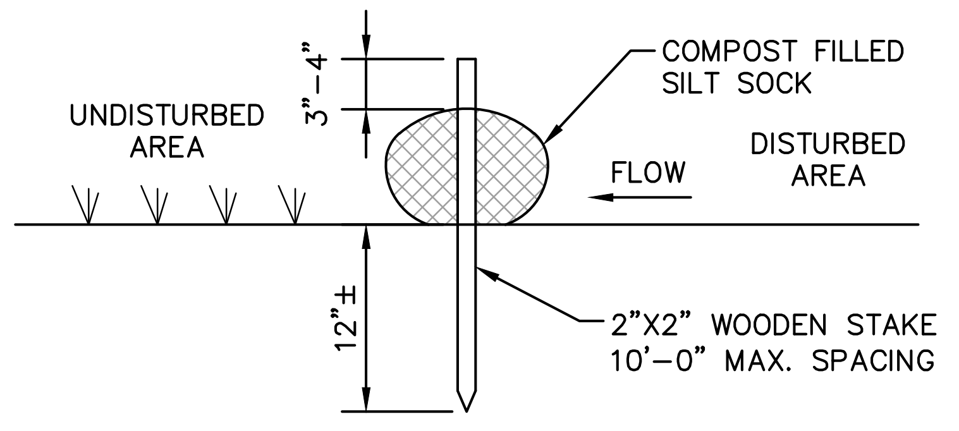
1. ALL PROPOSED VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING. THE INSTALLATION OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENTS.

2. ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.

3. AFTER NOVEMBER 15TH, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF CRUSHED GRAVEL.



PLAN VIEW



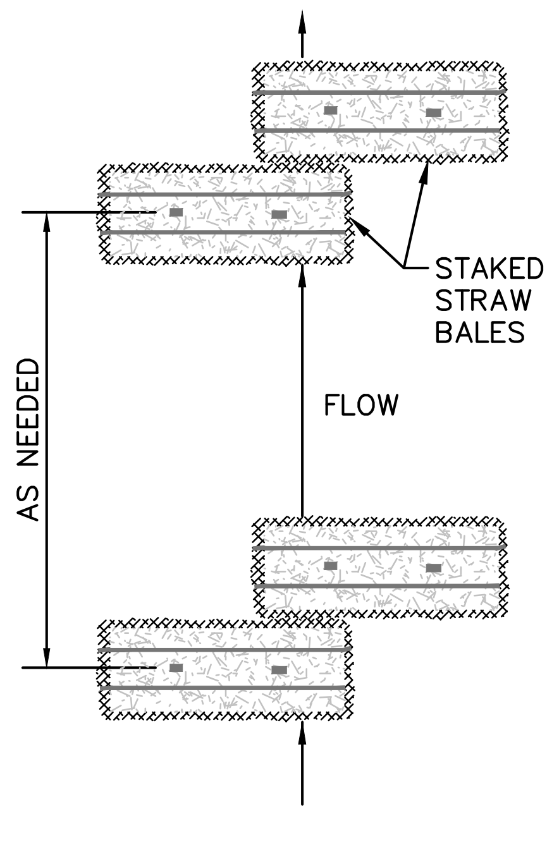
SECTION VIEW

SILT SOCK NOTES:

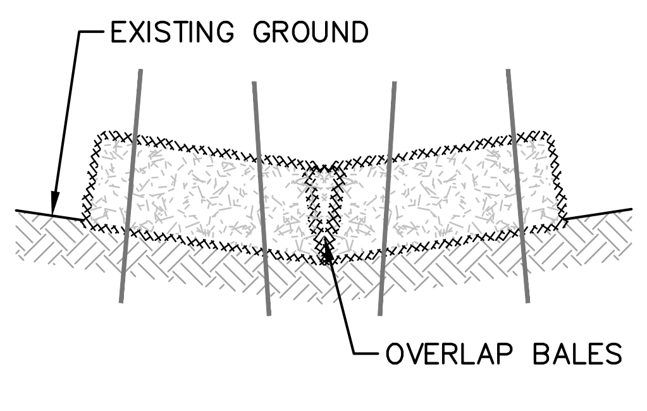
1. SILT SOCK SHALL BE INSTALLED BEFORE ANY EARTH REMOVAL OR EXCAVATION TAKES PLACE.
2. INSTALL SILT SOCK AROUND ALL MATERIAL STOCKPILES.
3. MAINTENANCE SHALL BE PERFORMED AS NEEDED, AND THE MATERIAL REMOVED WHEN "BULGES" DEVELOP. DO NOT DEPOSIT THE MATERIAL NEAR WETLANDS OR WATERCOURSES.

1/C7 SILT SOCK EROSION CONTROL DETAIL

SCALE: NONE



PLAN VIEW



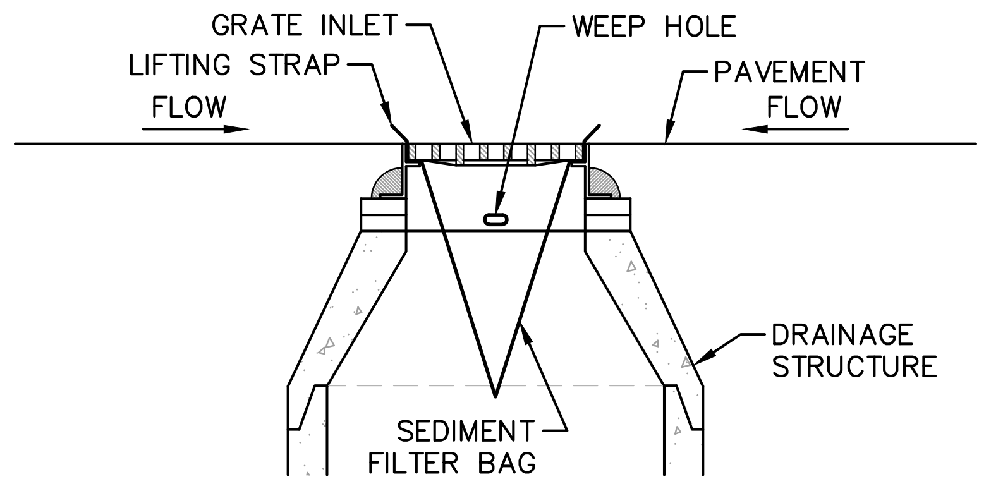
ELEVATION

STRAW BALE CHECK DAM NOTES:

1. EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF 4".
2. BALES SHALL BE SECURELY ANCHORED IN PLACE BY STAKES OR REBARS DRIVEN THROUGH THE BALES. THE FIRST STAKE IN EACH BALE SHALL BE ANGLED TOWARDS A PREVIOUSLY LAID BALE TO FORCE BALES TOGETHER.
3. INSPECTION SHALL BE FREQUENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
4. BALES SHALL BE REMOVED WHEN THEY ARE FULL OF SEDIMENT SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

2/C7 STRAW BALE CHECK DAM DETAIL

SCALE: NONE

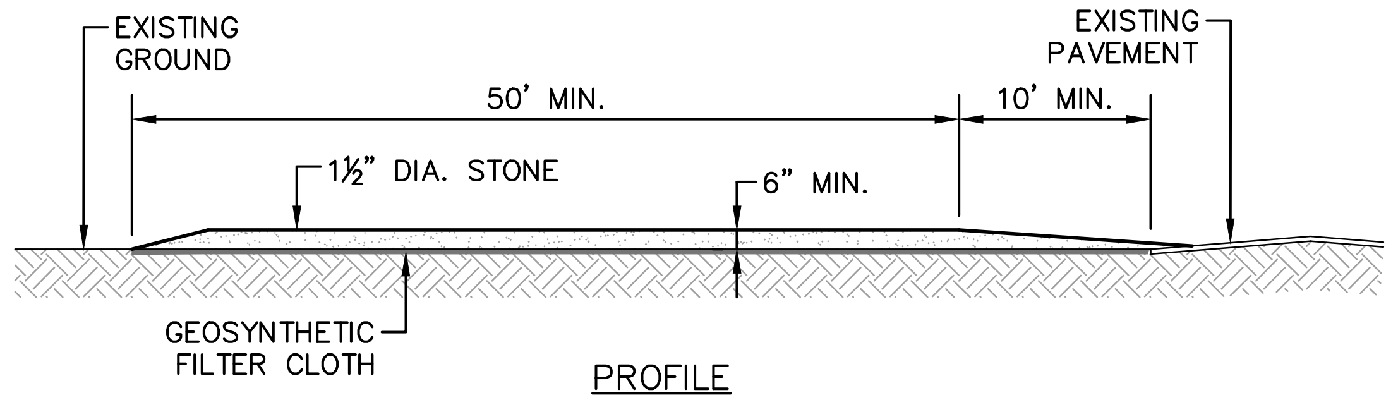


INLET PROTECTION NOTES:

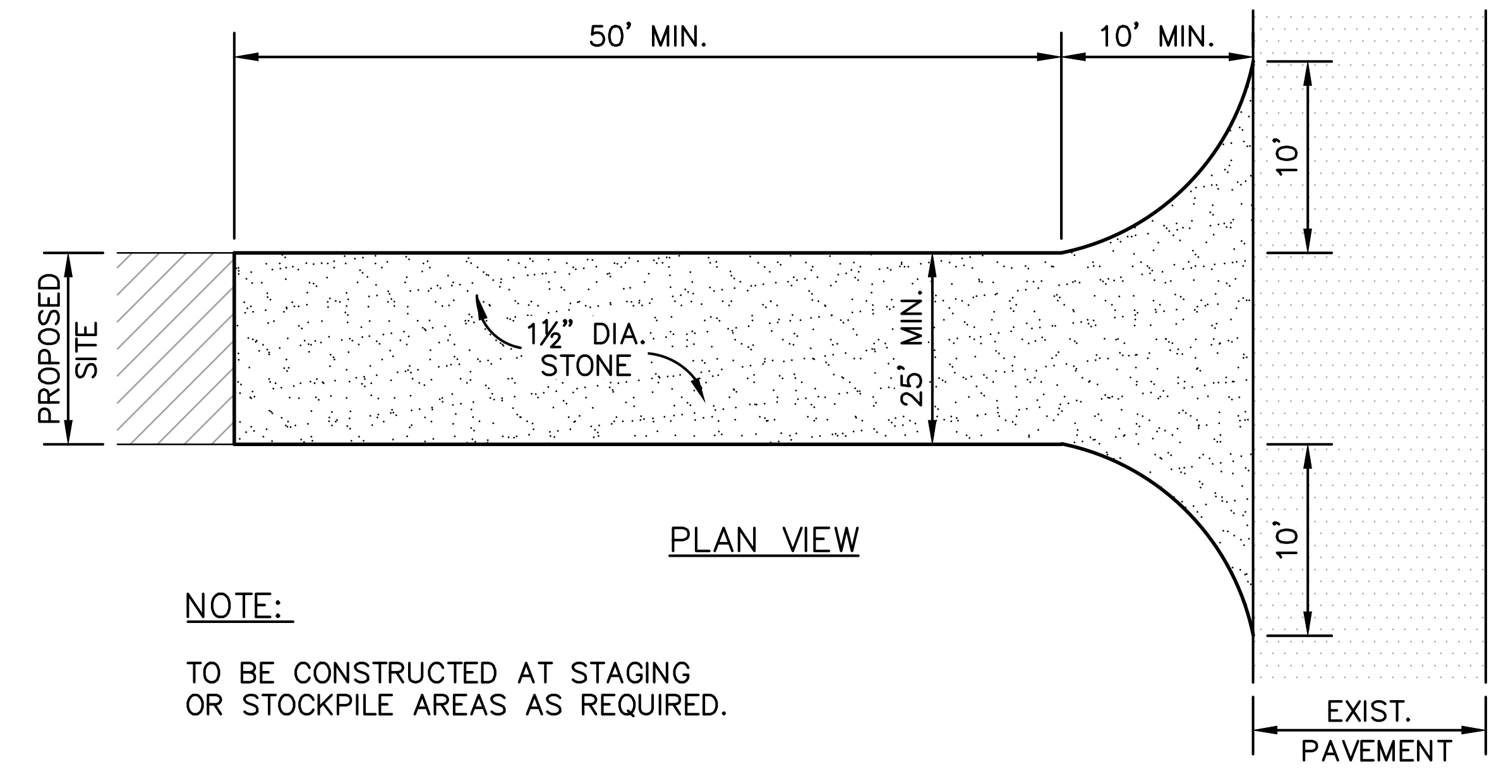
1. THE SEDIMENT FILTER BAG SHALL BE DESIGNED FOR CATCH BASIN INLET PROTECTION. FILTER FABRIC IS NOT AN ACCEPTABLE SEDIMENT FILTER BAG.
2. REMOVE DRAINAGE INLET GRATE AND PLACE SEDIMENT FILTER BAG AROUND THE FRAME, REPLACE GRATE AND SEDIMENT FILTER BAG IN POSITION OR FOLLOW MANUFACTURER'S RECOMMENDATIONS. LIFTING STRAPS SHALL BE EXPOSED AND READY FOR MAINTENANCE PROCEDURES.
3. INSPECT SEDIMENT FILTER BAG WEEKLY AND AFTER EVERY RAINFALL EVENT.
4. REPLACE, CLEAN OR REMOVE SEDIMENT FILTER BAG AS DIRECTED.

3/C7 INLET PROTECTION DETAIL

SCALE: NONE



PROFILE



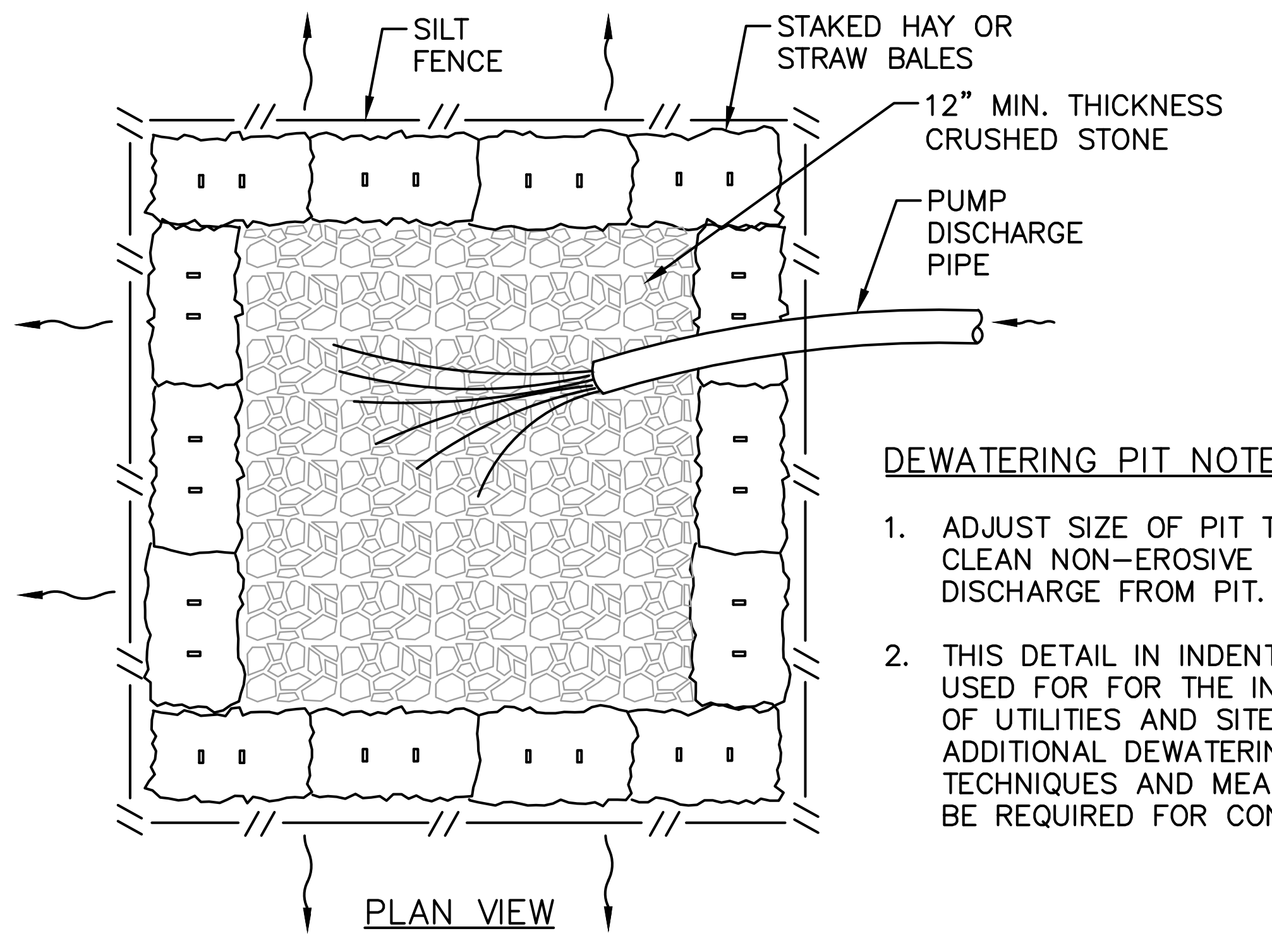
PLAN VIEW

NOTE:

TO BE CONSTRUCTED AT STAGING OR STOCKPILE AREAS AS REQUIRED.

4/C7 STABILIZED CONSTRUCTION ENTRY DETAIL

SCALE: NONE



PLAN VIEW

DEWATERING PIT NOTES:

1. ADJUST SIZE OF PIT TO MAINTAIN CLEAN NON-EROSIVE WATER DISCHARGE FROM PIT.
2. THIS DETAIL IN INDENTED TO BE USED FOR FOR THE INSTALLATION OF UTILITIES AND SITE FEATURES. ADDITIONAL DEWATERING TECHNIQUES AND MEASURES MAY BE REQUIRED FOR CONSTRUCTION.

5/C7 DEWATERING PIT DETAIL (AS NEEDED)

SCALE: NONE

WILLIAM R. DAVIDSON
CIVIL
NO. 50036
04/19/22

REV.	REVISION DESCRIPTION	DATE
2	100% DESIGN PLANS ISSUED FOR BIDDING	04/19/22
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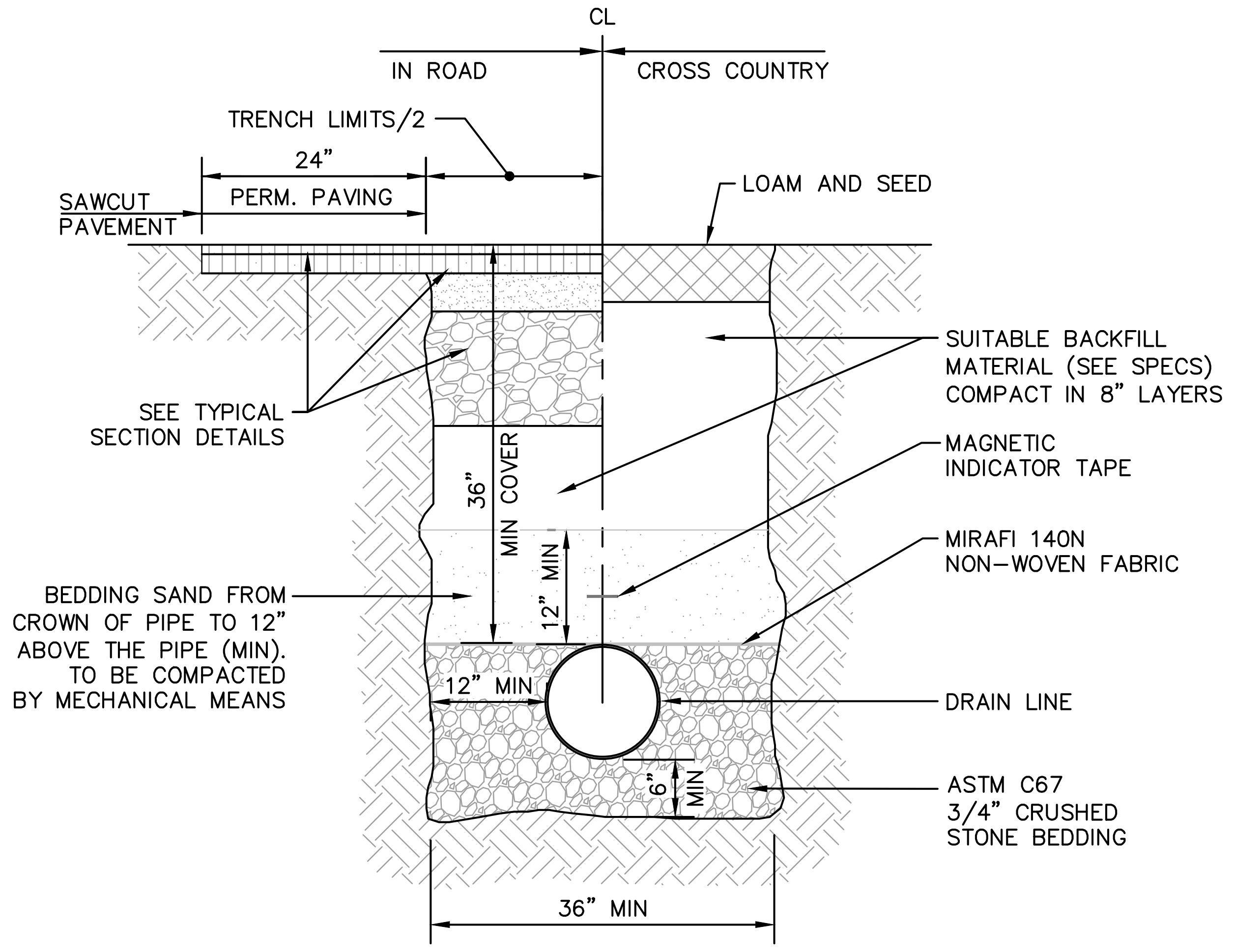
DRACUT PUBLIC SCHOOLS

EROSION CONTROL
NOTES & DETAILS

C7

PROJECT NO. 21.926301.00

SHEET 11 OF 16

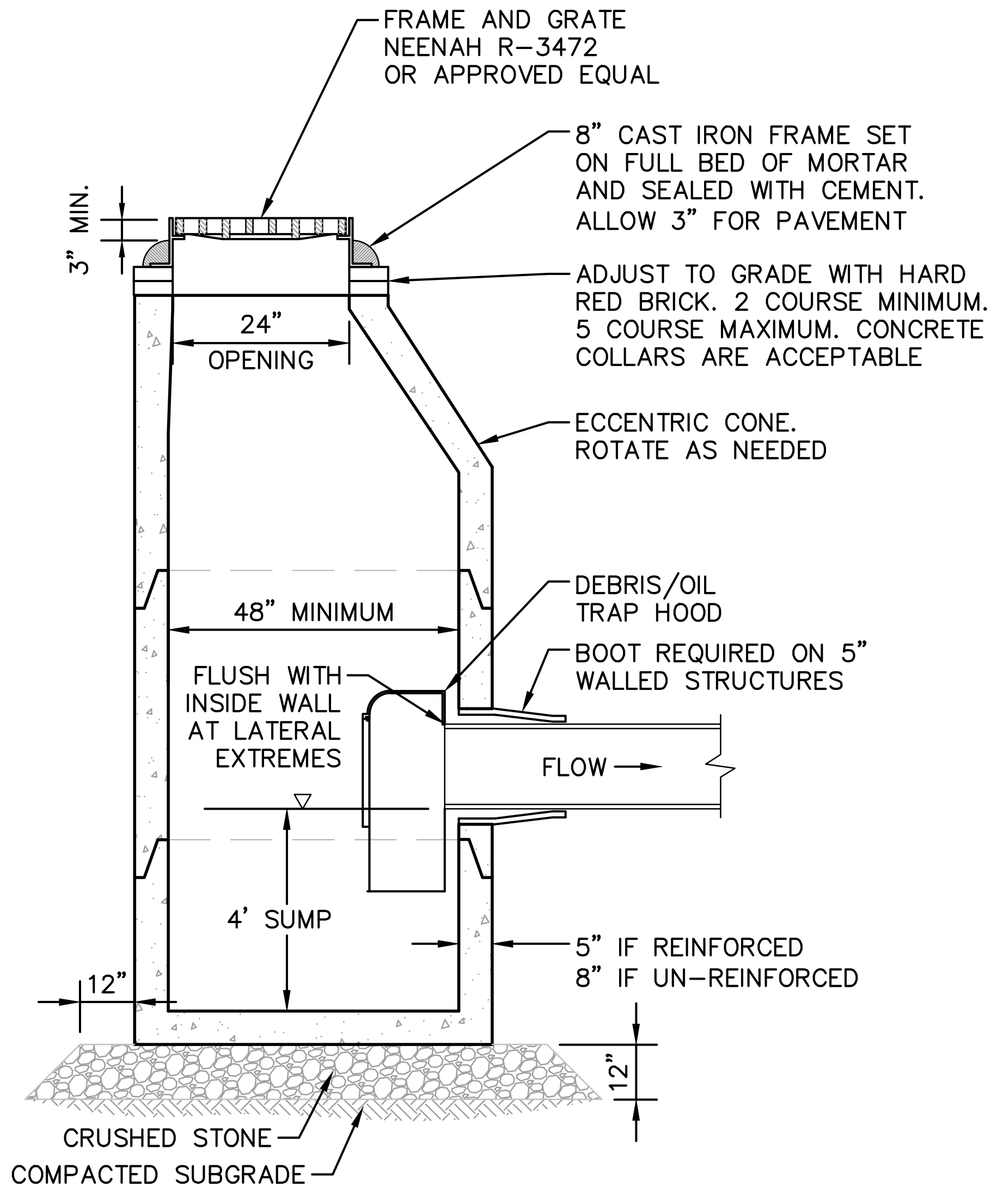

CL
IN ROAD
CROSS COUNTRY
TRENCH LIMITS/2
24"
PERM. PAVING
SAWCUT PAVEMENT
LOAM AND SEED
SUITABLE BACKFILL MATERIAL (SEE SPECS) COMPACT IN 8" LAYERS
SEE TYPICAL SECTION DETAILS
MAGNETIC INDICATOR TAPE
36" MIN COVER
12" MIN
MIRAFI 140N NON-WOVEN FABRIC
BEDDING SAND FROM CROWN OF PIPE TO 12" ABOVE THE PIPE (MIN). TO BE COMPACTED BY MECHANICAL MEANS
12" MIN
DRAIN LINE
6" MIN
ASTM C67 3/4" CRUSHED STONE BEDDING
36" MIN

NOTE:

1. ALL STONE, EXCAVATION, BACKFILL, FABRIC, AND SAND IS SUBSIDIARY TO DRAIN PIPE.

1 C8 DRAIN TRENCH DETAIL

SCALE: NONE

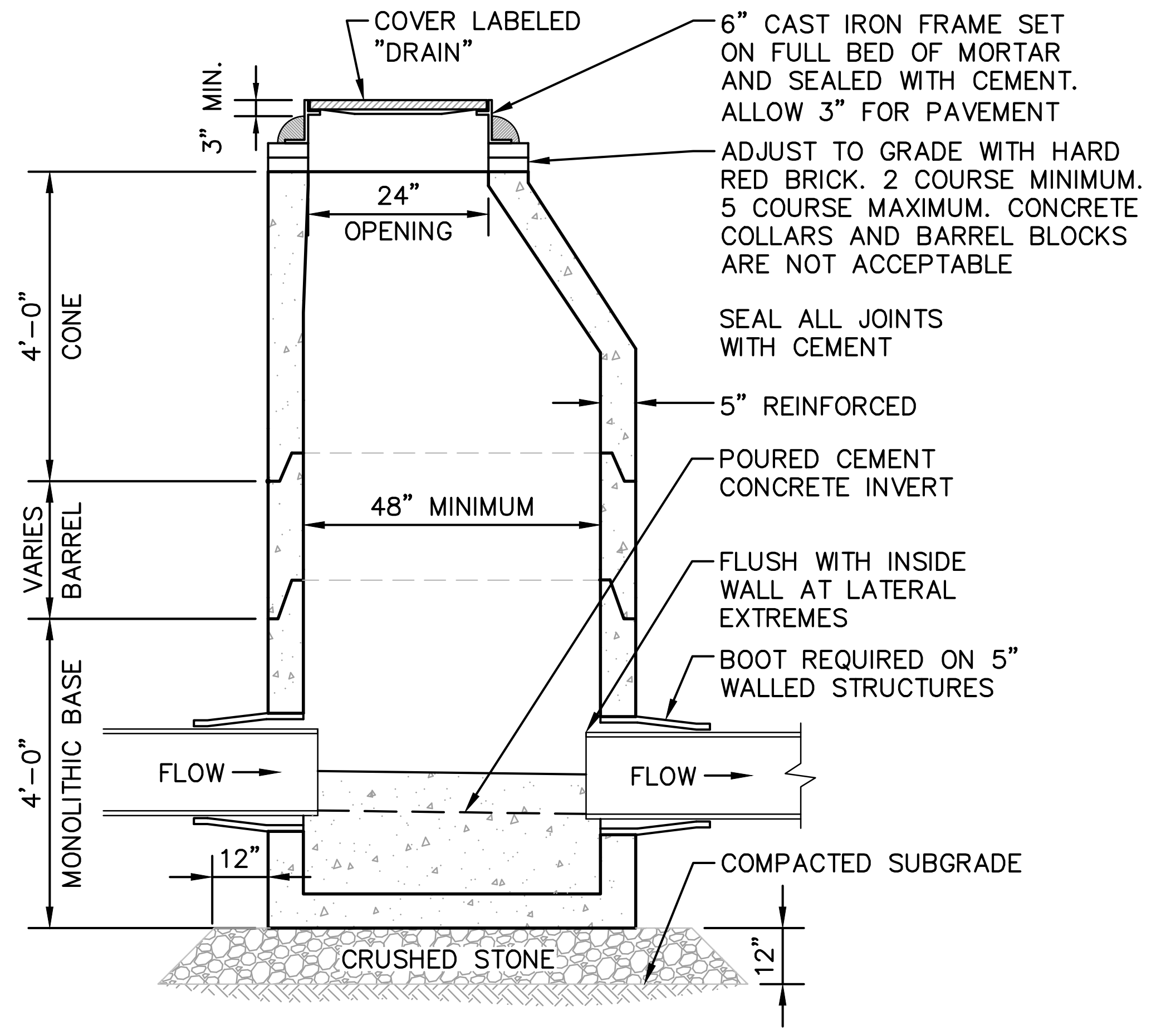

FRAME AND GRATE NEENAH R-3472 OR APPROVED EQUAL
3" MIN.
8" CAST IRON FRAME SET ON FULL BED OF MORTAR AND SEALED WITH CEMENT. ALLOW 3" FOR PAVEMENT
ADJUST TO GRADE WITH HARD RED BRICK. 2 COURSE MINIMUM. 5 COURSE MAXIMUM. CONCRETE COLLARS ARE ACCEPTABLE
24" OPENING
ECCENTRIC CONE. ROTATE AS NEEDED
48" MINIMUM
DEBRIS/OIL TRAP HOOD
FLUSH WITH INSIDE WALL AT LATERAL EXTREMES
BOOT REQUIRED ON 5" WALLED STRUCTURES
FLOW
4' SUMP
5" IF REINFORCED 8" IF UN-REINFORCED
12"
12"
CRUSHED STONE
COMPACTED SUBGRADE

CATCH BASIN NOTES:

1. STRUCTURE SHALL BE DESIGNED FOR H-20 LOADING.
2. CONCRETE: 4,000 PSI AFTER 28 DAYS.
3. CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQ.IN. PER LINEAR FOOT IN ALL SECTIONS AND SHALL BE IN THE CENTER OF THE WALL. STRUCTURE SHALL BE DESIGNED TO SUPPORT HS20 LOADINGS.
4. THE TONGUE OR THE GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQ.IN. PER LINEAR FOOT.
5. SEAL ALL PRECAST JOINTS WITH BITUMASTIC SEAL.
6. CONCRETE RISERS OF 2", 3" AND 4" CAN BE USED TO REACH DESIRED DEPTH. 12" MAXIMUM RISER HEIGHT.
7. ALL STONE, EXCAVATION, AND BACKFILL IS SUBSIDIARY TO CATCH BASIN.

2 C8 CATCH BASIN DETAIL

SCALE: NONE

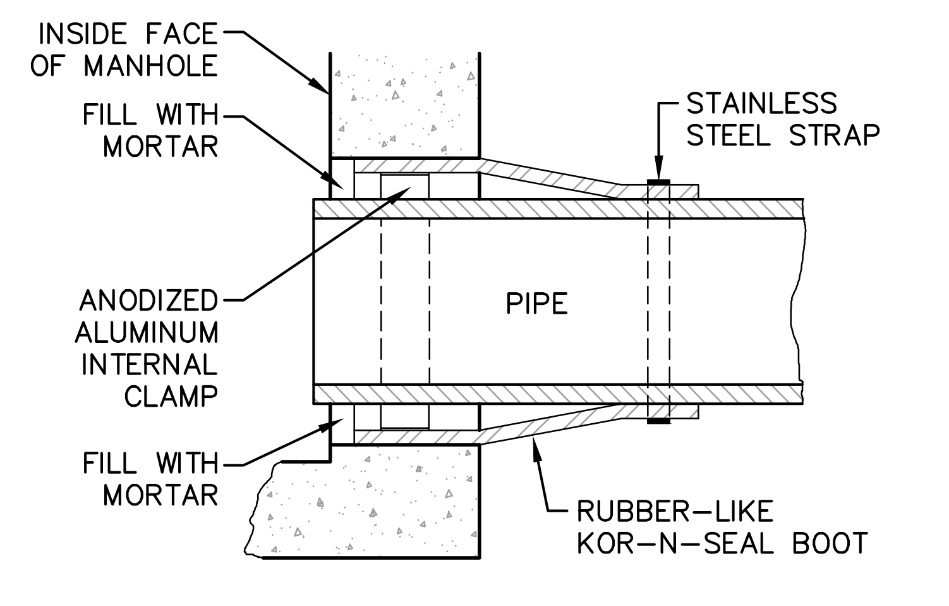

COVER LABELED "DRAIN"
6" CAST IRON FRAME SET ON FULL BED OF MORTAR AND SEALED WITH CEMENT. ALLOW 3" FOR PAVEMENT
3" MIN.
ADJUST TO GRADE WITH HARD RED BRICK. 2 COURSE MINIMUM. 5 COURSE MAXIMUM. CONCRETE COLLARS AND BARREL BLOCKS ARE NOT ACCEPTABLE
24" OPENING
4'-0" CONE
SEAL ALL JOINTS WITH CEMENT
5" REINFORCED
VARIES BARREL
POURED CEMENT CONCRETE INVERT
48" MINIMUM
FLUSH WITH INSIDE WALL AT LATERAL EXTREMES
4'-0" MONOLITHIC BASE
BOOT REQUIRED ON 5" WALLED STRUCTURES
FLOW
FLOW
12"
COMPACTED SUBGRADE
CRUSHED STONE
12"

DRAIN MANHOLE NOTES:

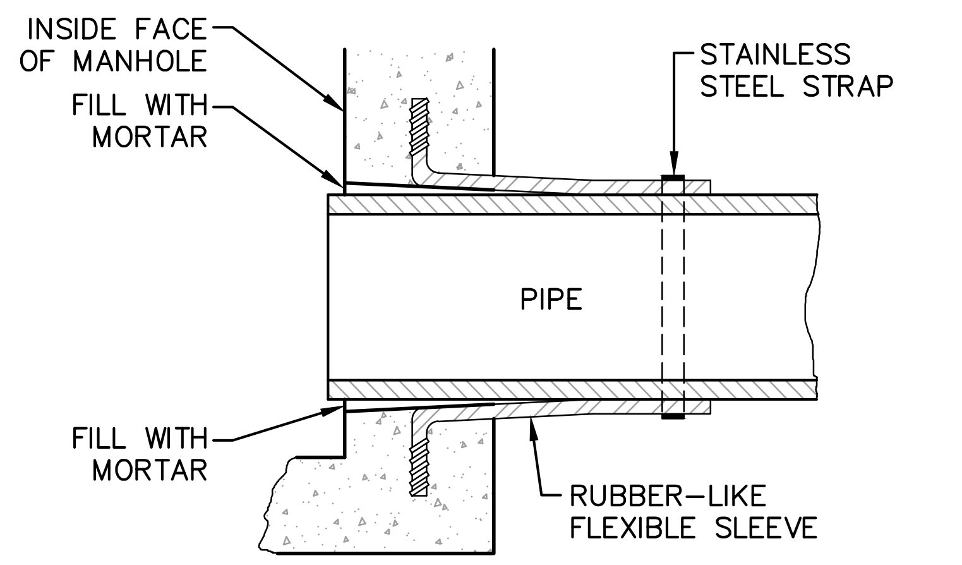
1. STRUCTURE SHALL BE DESIGNED FOR H-20 LOADING.
2. CONCRETE: 4,000 PSI AFTER 28 DAYS.
3. CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQ.IN. PER LINEAR FOOT IN ALL SECTIONS AND SHALL BE IN THE CENTER OF THE WALL. STRUCTURE SHALL BE DESIGNED TO SUPPORT HS20 LOADINGS.
4. THE TONGUE OR THE GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQ.IN. PER LINEAR FOOT.
5. SEAL ALL PRECAST JOINTS WITH BITUMASTIC SEAL.
6. CONCRETE RISERS OF 2", 3" AND 4" CAN BE USED TO REACH DESIRED DEPTH. 12" MAXIMUM RISER HEIGHT.
7. FIBERGLASS MANHOLE STEPS SHALL BE INSTALLED IN ALL DRAIN MANHOLES WITH A DEPTH GREATER THAN 10 FEET.
8. ALL STONE, EXCAVATION, AND BACKFILL IS SUBSIDIARY TO DRAIN MANHOLE.

3 C8 DRAIN MANHOLE DETAIL

SCALE: NONE



KOR-N-SEAL JOINT SLEEVE
OR EQUAL



LOCK-JOINT FLEXIBLE MANHOLE SLEEVE
OR EQUAL

4 C8 TYPICAL DRAIN PIPE TO MANHOLE DETAILS

SCALE: NONE

CAPACITIES:

1. PEAK TREATMENT FLOW: 3.0 CFS.
2. SEDIMENT STORAGE CAPACITY: 0.7 C.Y.
3. OIL STORAGE CAPACITY: 70 GAL.

Hydro International®
STORMWATER SOLUTIONS
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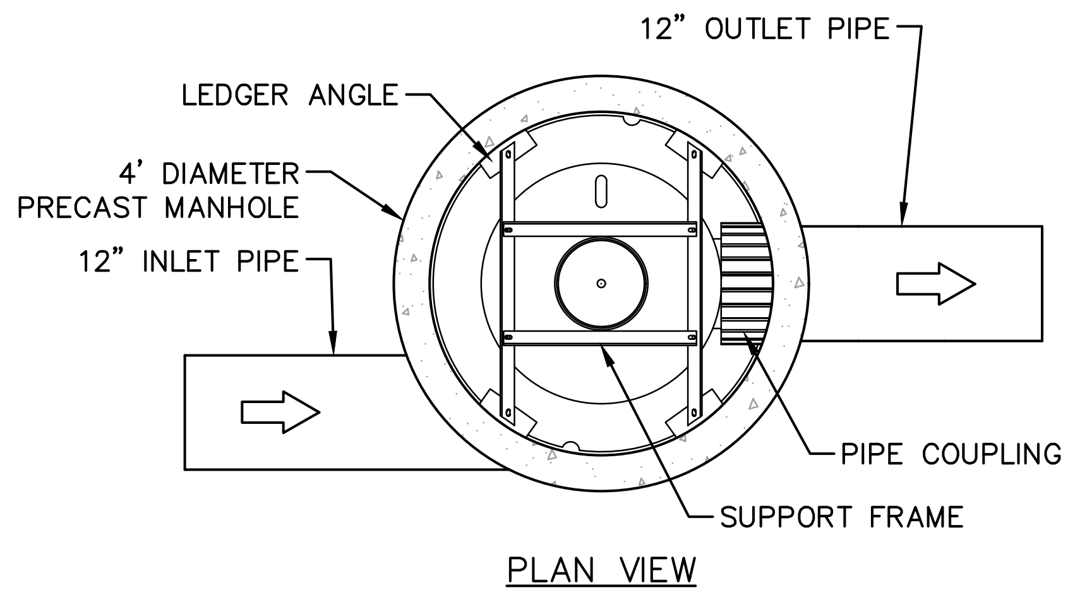
PORTLAND, MAINE 04102
TEL: (207) 756-6200
FAX: (207) 756-6212
STORMWATERINQUIRY@HYDRO-INT.COM

NOTES:

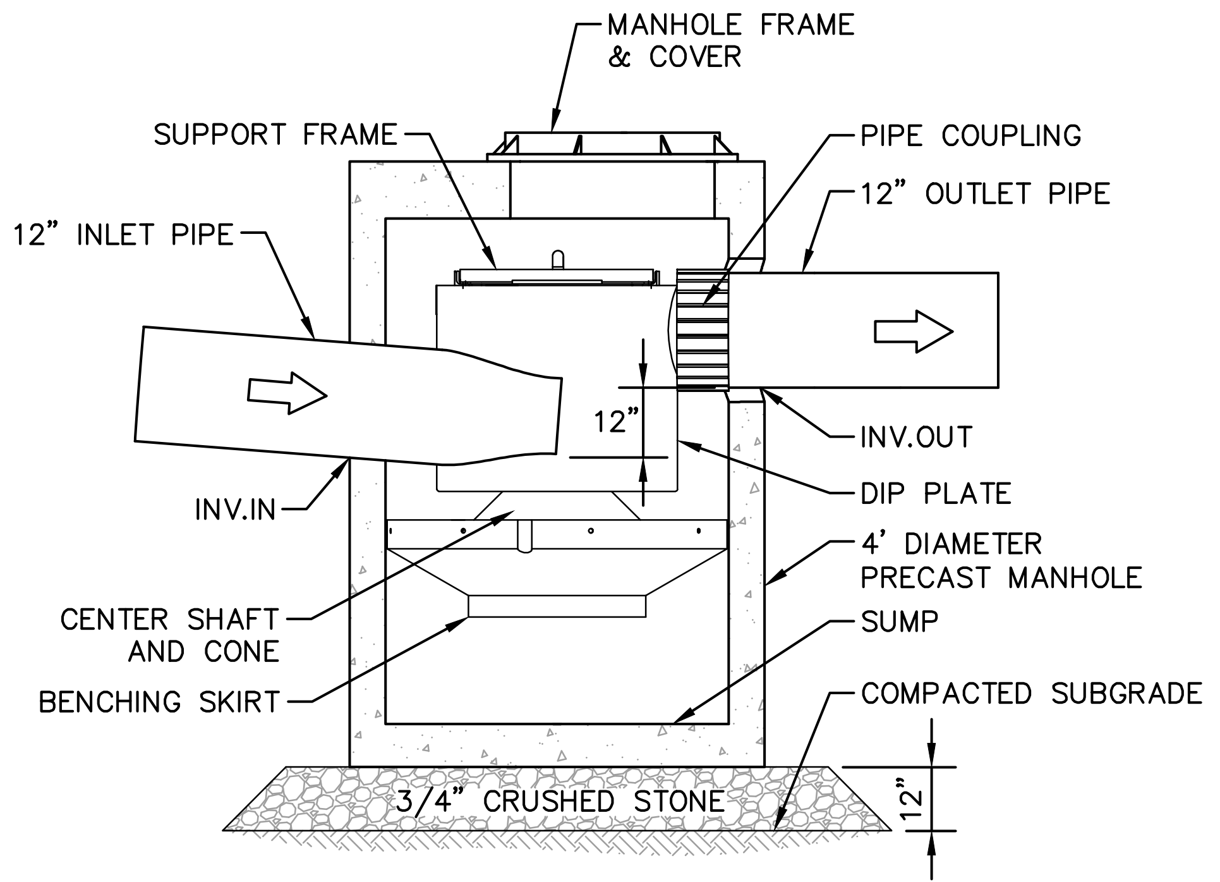
1. MANHOLE WALL AND SLAB THICKNESSES ARE NOT TO SCALE.
2. CONTACT HYDRO INTERNATIONAL FOR A BOTTOM OF STRUCTURE ELEVATION PRIOR TO SETTING DOWNSTREAM DEFENDER MANHOLE.
3. TYPICALLY DOWNSTREAM DEFENDERS WILL BE DELIVERED TO THE PROJECT SITE WITH A TOP SLAB ELEVATION 12'± BELOW FINISHED GRADE. PURCHASER SHALL BE RESPONSIBLE FOR GRADE RINGS OR BLOCK AND MORTAR NECESSARY TO MEET FINAL GRADE.
4. ALL EXCAVATION, BEDDING, STONE, BACKFILL IS SUBSIDIARY TO HYDRODYNAMIC SEPARATOR.

ADDITIONAL DESIGN INFORMATION:

1. THE OUTLET PIPE STUB (NOT SHOWN) IS A ROTO-MOLDED PRODUCT WITH AN I.D. OF 12 IN. THAT CANNOT BE MODIFIED. TO AVOID THE USE OF A REDUCER OR EXPANDER ON THE OUTLET A 12 IN. OUTLET PIPE SHOULD BE USED IF POSSIBLE. THE ORIENTATION OF THE OUTLET PIPE CAN BE ADJUSTED TO SUIT SITE CONDITIONS.
2. MAXIMUM PIPE SIZE IS 12 IN. THE INLET PIPE INVERT SHOULD BE PLACED ONE INLET PIPE DIAMETER BELOW THE OUTLET PIPE INVERT. THE I.D. OF THE INLET PIPE SHOULD BE PLACED TANGENT TO THE I.D. OF THE MANHOLE. THE ORIENTATION OF THE INLET PIPE CAN BE ADJUSTED TO SUIT SITE CONDITIONS. HEADLOSS AT 3.0 CFS WITH A 12 IN. INLET: 8 IN. HEADLOSS WILL INCREASE WITH SMALLER INLET PIPES.
3. SEDIMENT SHALL BE STORED IN A ZONE THAT IS ISOLATED FROM THE MAIN FLOW PATH AND PROTECTED FROM RE-ENTRAINMENT BY THE BENCHING SKIRT.
4. DIMENSIONS ARE GENERAL AND INTENDED FOR GUIDANCE ONLY.



PLAN VIEW



SECTION VIEW

5 C8 HYDRODYNAMIC VORTEX SEPARATOR BY HYDRO INTERNATIONAL

SCALE: NONE

WILLIAM R. DAVIDSON
CIVIL
No. 50038
04/19/22

REV.	DATE	REVISION DESCRIPTION
2	04/19/22	100% DESIGN PLANS ISSUED FOR BIDDING
1	02/11/22	50% DESIGN REVIEW SUBMISSION

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SCALE: AS SHOWN
ORIGINAL DATE: FEBRUARY 11, 2022
DESIGNED BY SMT/JCH
DRAWN BY JCH/SCR
CHECKED BY WRD

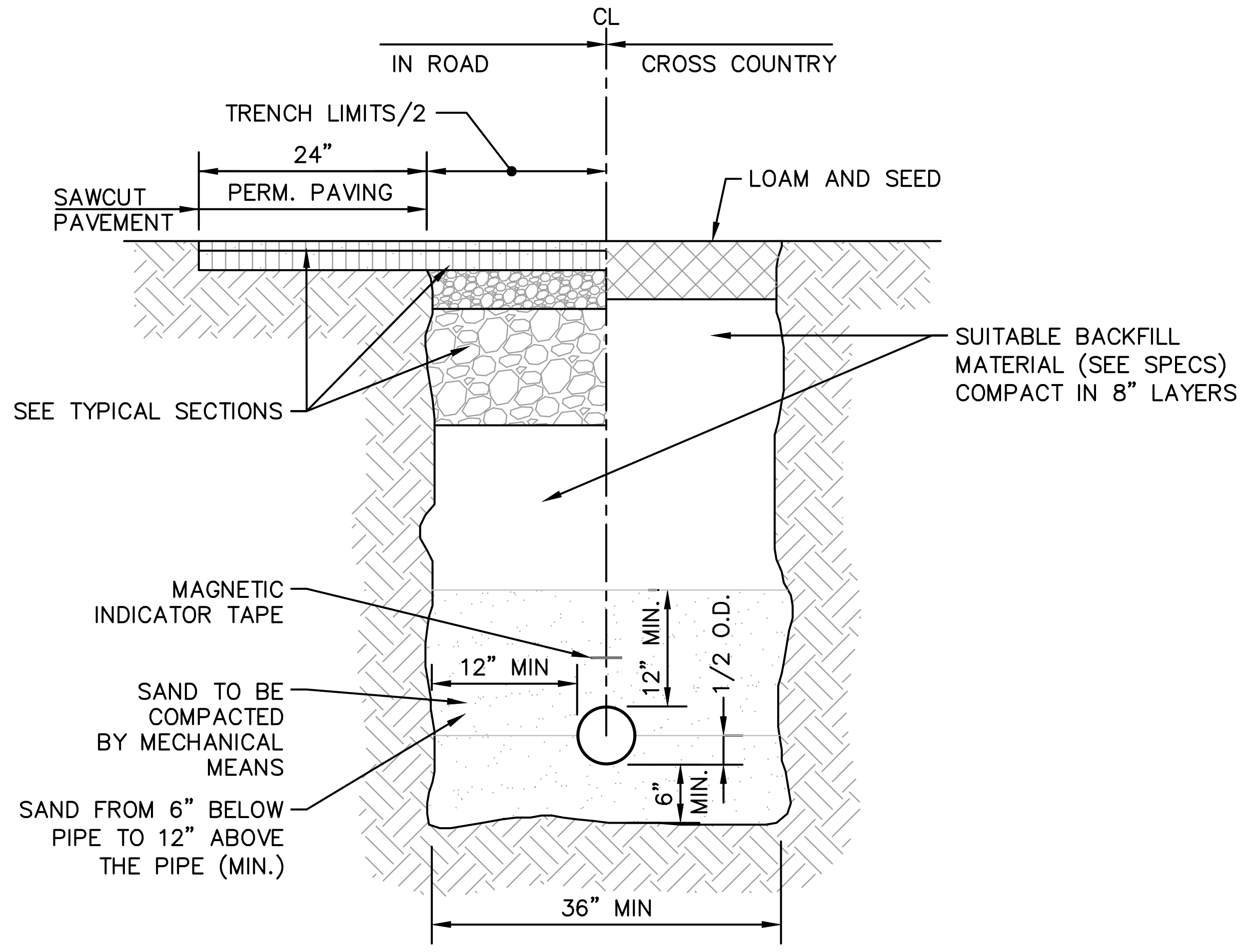
CLIENT
TOWN OF DRACUT
62 ARLINGTON STREET
DRACUT, MA 01826

PROJECT
PEDESTRIAN SAFETY & TRAFFIC
CIRCULATION IMPROVEMENT PROJECT
DRACUT PUBLIC SCHOOLS

DRAINAGE DETAILS
C8

PROJECT NO. 21.926301.00

SHEET 12 OF 16

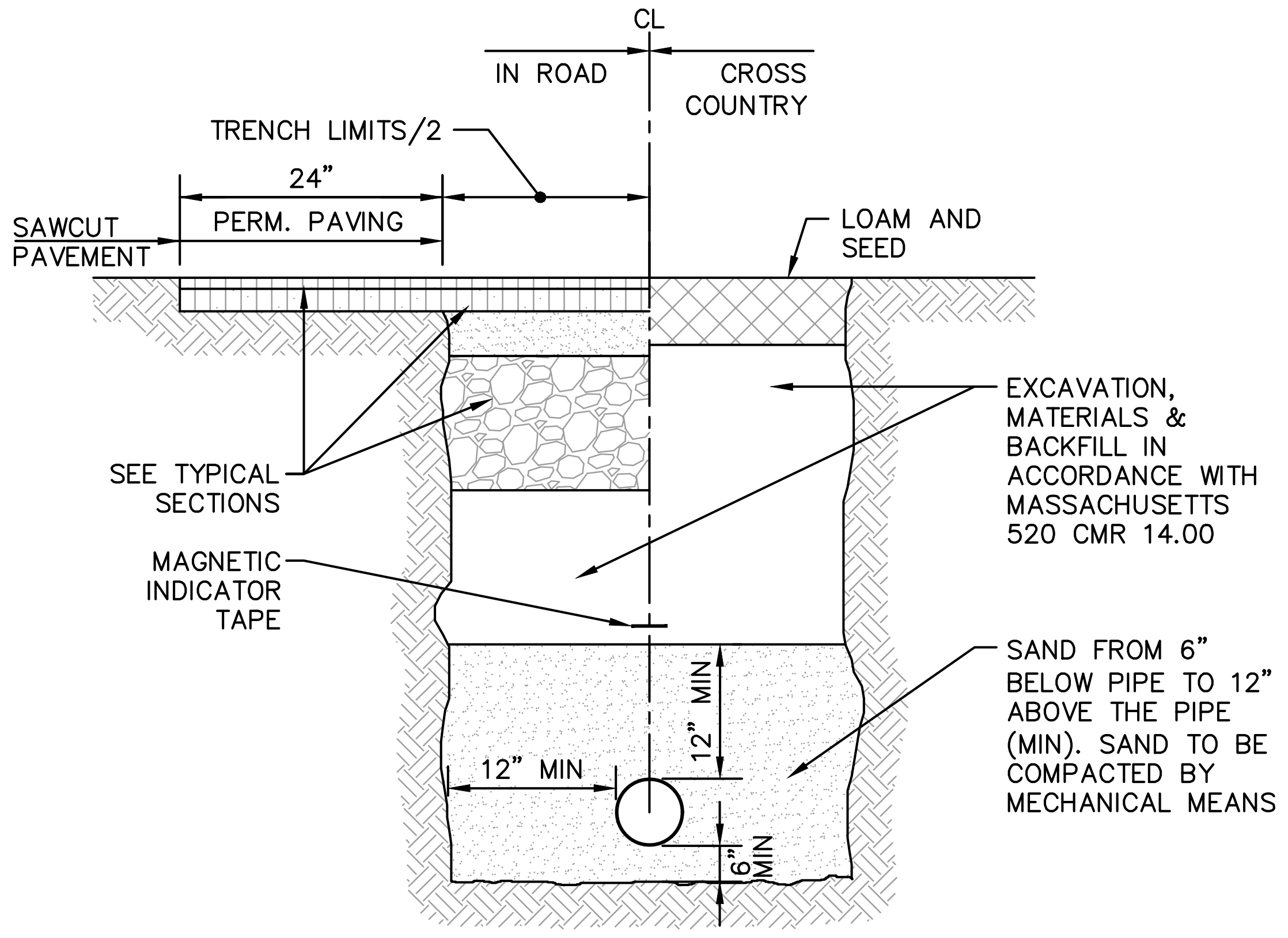


WATERLINE TRENCH NOTES:

1. APPROVED MATERIAL: SHALL BE NATURAL MATERIAL EXCAVATED DURING THE COURSE OF CONSTRUCTION, BUT SHALL EXCLUDE DEBRIS, PIECES OF PAVEMENT, ORGANIC MATTER, TOPSOIL, CLUMPS MORE THAN 3" DIA., ALL EXCAVATED LEDGE ROCK, STUMPS OR ANY MATERIAL WHICH, AS DETERMINED BY THE ENGINEER, WILL NOT PROVIDE SUFFICIENT SUPPORT OR MAINTAIN THE COMPLETED CONSTRUCTION IN A STABLE CONDITION.
2. SEWER AND WATER PIPING RUNNING APPROXIMATELY PARALLEL MUST BE SEPARATED BY A HORIZONTAL DISTANCE OF TEN FEET MINIMUM.
3. WATER MAINS ARE TO HAVE A MINIMUM COVER OF 5'-0" FT.
4. ALL STONE, EXCAVATION, BACKFILL, FABRIC, AND SAND IS SUBSIDIARY TO WATER LINE.

1 C9 WATER LINE TRENCH DETAIL

SCALE: NONE

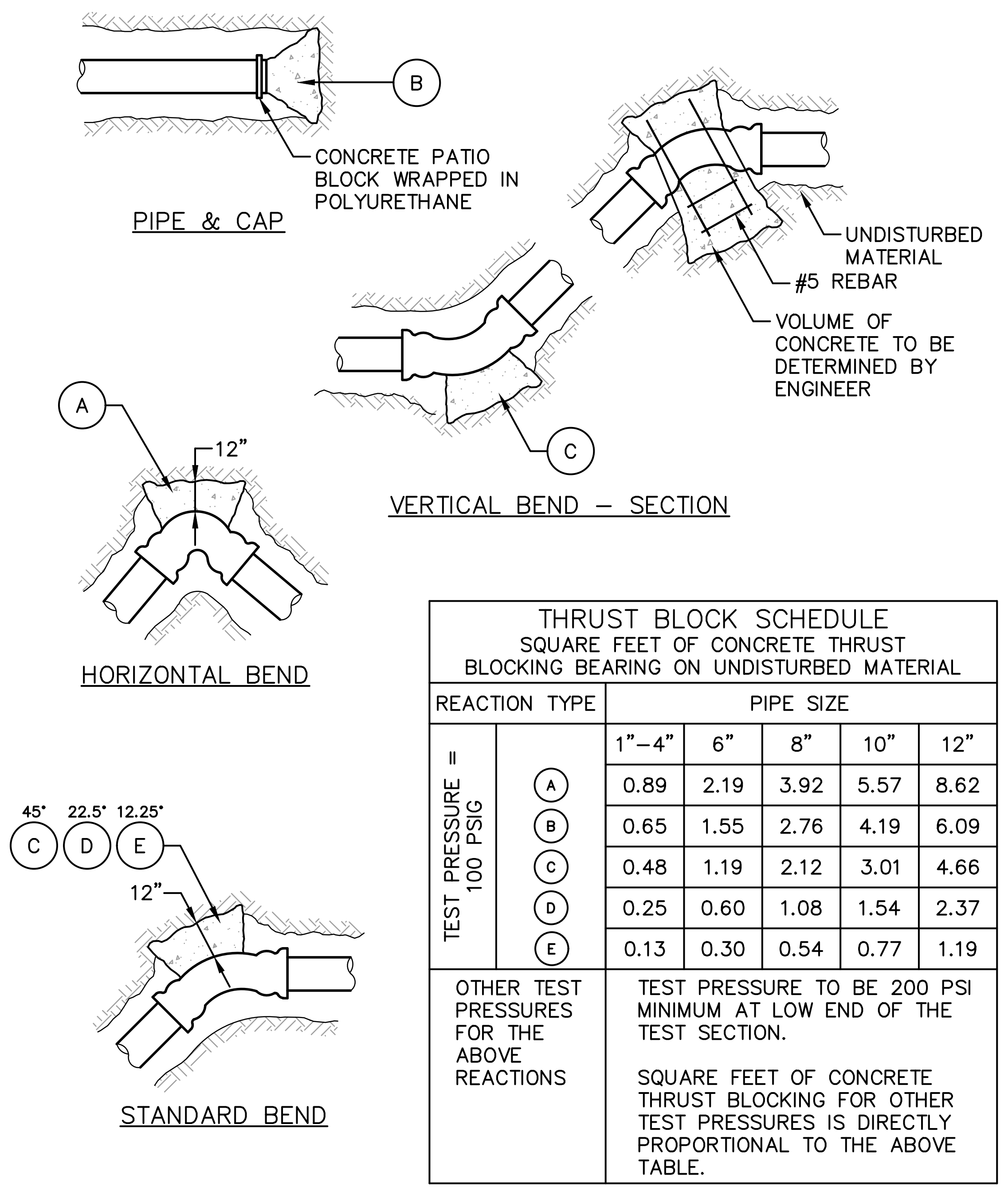

CL
IN ROAD
CROSS COUNTRY
TRENCH LIMITS/2
24"
PERM. PAVING
SAWCUT PAVEMENT
LOAM AND SEED
SEE TYPICAL SECTIONS
EXCAVATION, MATERIALS & BACKFILL IN ACCORDANCE WITH MASSACHUSETTS 520 CMR 14.00
MAGNETIC INDICATOR TAPE
12" MIN
12" MIN
SAND FROM 6" BELOW PIPE TO 12" ABOVE THE PIPE (MIN). SAND TO BE COMPACTED BY MECHANICAL MEANS
6" MIN

TRENCH NOTES:

1. ELECTRICAL CONDUIT SHALL BE SCHEDULE 40 PVC AND SHALL CONFORM TO THE APPLICABLE SECTIONS OF NEMA TC-2-1990 AND BE UL LISTED.
2. ALL PVC CONDUIT JOINTS SHALL BE CEMENTED.
3. A SUITABLE PULL CABLE, CAPABLE OF 200 POUNDS OF PULL, MUST BE INSTALLED IN THE ELECTRICAL CONDUIT.
4. COORDINATE SIZE OF CONDUIT WITH OWNER.
5. DEPTH OF CONDUIT SHALL BE 36" TO INVERT.
6. ALL STONE, EXCAVATION, BACKFILL, FABRIC, AND SAND IS SUBSIDIARY TO ELECTRICAL TRENCH.

4 C9 ELECTRICAL TRENCH DETAIL

SCALE: NONE



THRUST BLOCK SCHEDULE
SQUARE FEET OF CONCRETE THRUST BLOCKING BEARING ON UNDISTURBED MATERIAL

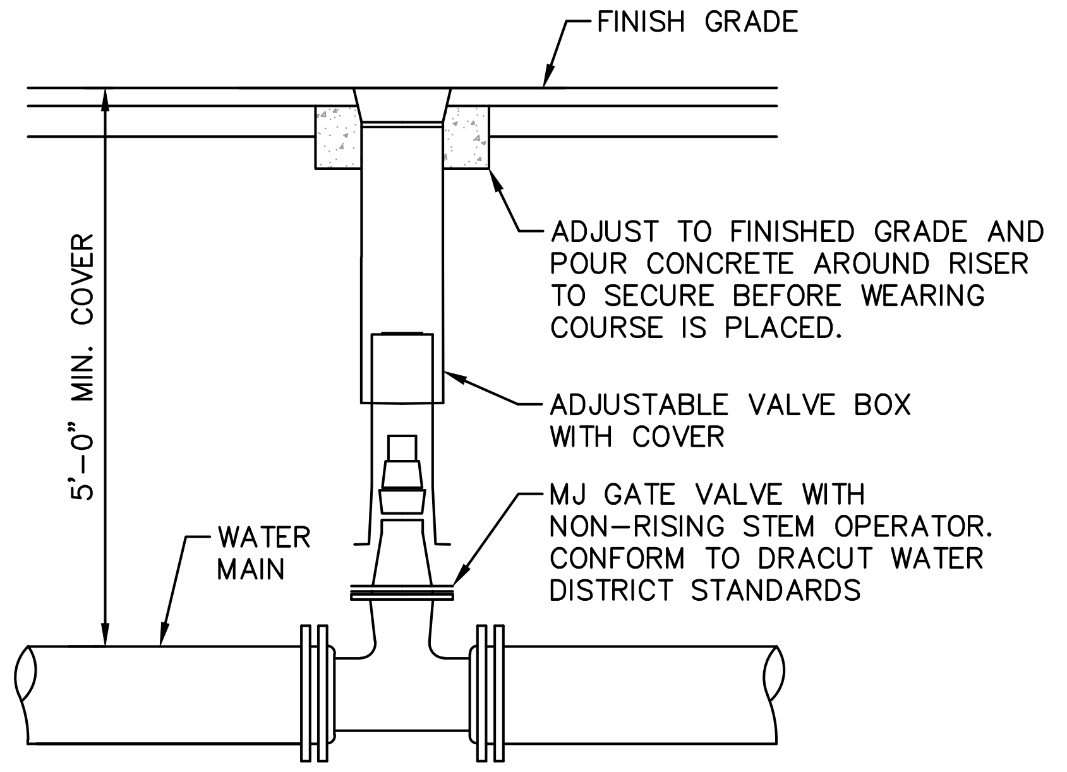
REACTION TYPE		PIPE SIZE				
		1"–4"	6"	8"	10"	12"
TEST PRESSURE = 100 PSIG	Ⓐ	0.89	2.19	3.92	5.57	8.62
	Ⓑ	0.65	1.55	2.76	4.19	6.09
	Ⓒ	0.48	1.19	2.12	3.01	4.66
	Ⓓ	0.25	0.60	1.08	1.54	2.37
	Ⓔ	0.13	0.30	0.54	0.77	1.19
OTHER TEST PRESSURES FOR THE ABOVE REACTIONS		TEST PRESSURE TO BE 200 PSI MINIMUM AT LOW END OF THE TEST SECTION. SQUARE FEET OF CONCRETE THRUST BLOCKING FOR OTHER TEST PRESSURES IS DIRECTLY PROPORTIONAL TO THE ABOVE TABLE.				

THRUST BLOCK NOTES:

1. POUR THRUST BLOCKS AGAINST UNDISTURBED MATERIAL. WHERE TRENCH HAS BEEN DISTURBED, EXCAVATE LOOSE MATERIAL AND EXTEND THRUST BLOCK TO UNDISTURBED MATERIAL. NO JOINTS SHALL BE COVERED WITH CONCRETE.
2. ON BENDS AND TEES, EXTEND THRUST BLOCKS FULL LENGTH OF FITTING.
3. PLACE CONCRETE PATIO BLOCKS IN FRONT OF ALL PLUGS BEFORE POURING THRUST BLOCK.
4. REQUIREMENTS OF THE ABOVE TABLE PRESUME MINIMUM SOIL BEARING OF 1 TON PER SQUARE FOOT AND MAY BE VARIED BY THE ENGINEER TO MEET OTHER CONDITIONS ENCOUNTERED.
5. RETAINER GLANDS ARE REQUIRED FOR ALL MECHANICAL JOINTS. THESE GLANDS DO NOT REDUCE THE REQUIREMENTS FOR THRUST RESTRAINT.
6. ALL FITTINGS SHALL BE WRAPPED IN POLYETHYLENE OR BUILDING PAPER PRIOR TO INSTALLATION OF CONCRETE RESTRAINT.
7. THREADED RODS SHALL BE ANSI A242 FY50 PIPE RESTRAINT NUTS TO MATCH AIWA C111. THREADED RODS AND NUTS TO BE FIELD COATED WITH BITUMINOUS PAINT.
8. THRUST RESTRAINT IS REQUIRED FOR ALL TEES, BENDS, REDUCERS, CAPS PLUGS, OR CROSSES.
9. INSTALL LIFT HOOKS INTO THRUST BLOCKS AT END CAPS AND PLUGS.
10. ALL WATERLINE CONSTRUCTION SHALL BE INSTALLED IN ACCORDANCE WITH THE DRACUT WATER DISTRICT SPECIFICATIONS

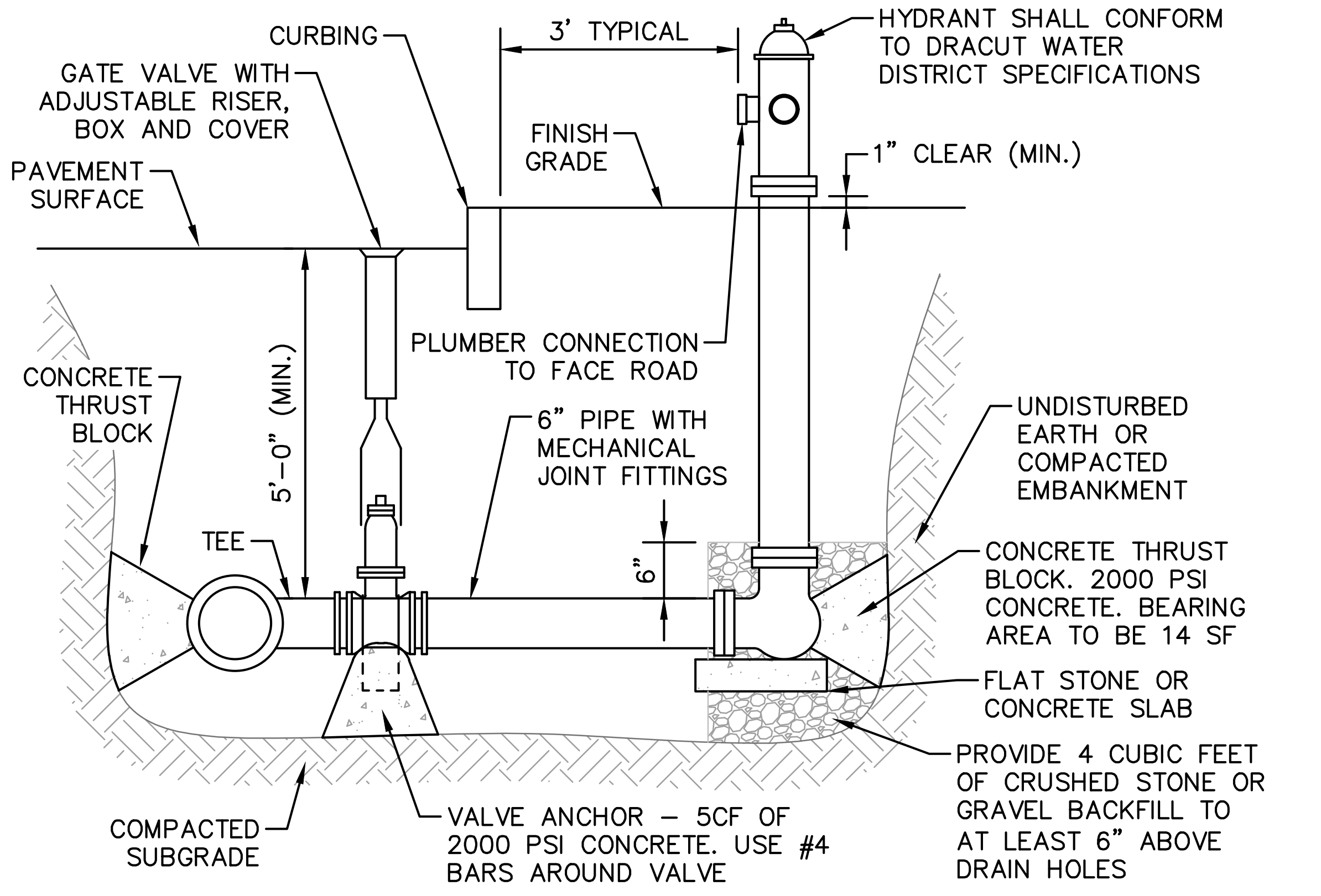
6 C9 WATER LINE THRUST BLOCK DETAILS

SCALE: NONE


FINISH GRADE
ADJUST TO FINISHED GRADE AND POUR CONCRETE AROUND RISER TO SECURE BEFORE WEARING COURSE IS PLACED.
5'-0" MIN. COVER
ADJUSTABLE VALVE BOX WITH COVER
MJ GATE VALVE WITH NON-RISING STEM OPERATOR. CONFORM TO DRACUT WATER DISTRICT STANDARDS
WATER MAIN

2 C9 GATE VALVE DETAIL

SCALE: NONE

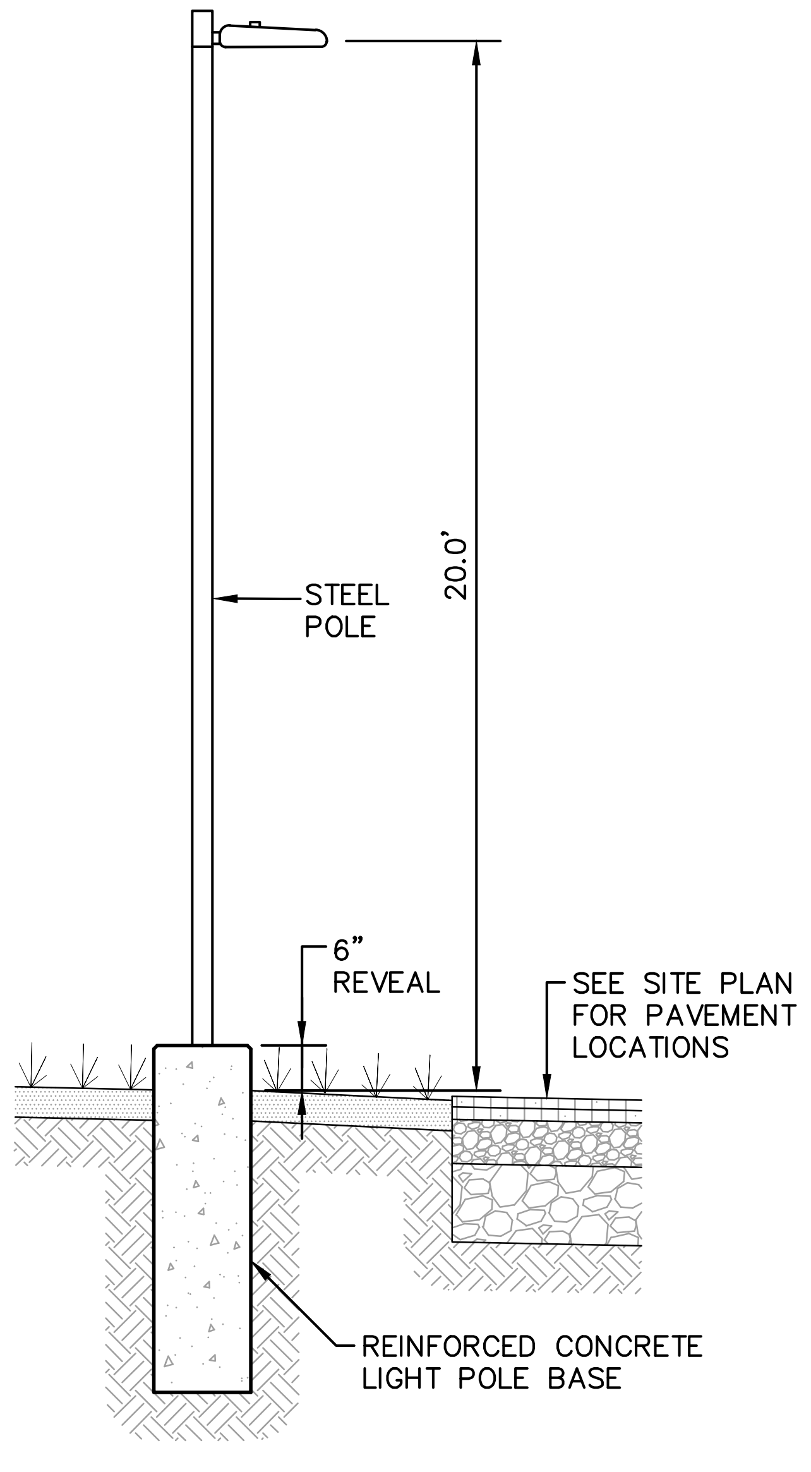

CURBING
3' TYPICAL
HYDRANT SHALL CONFORM TO DRACUT WATER DISTRICT SPECIFICATIONS
GATE VALVE WITH ADJUSTABLE RISER, BOX AND COVER
FINISH GRADE
1" CLEAR (MIN.)
PAVEMENT SURFACE
PLUMBER CONNECTION TO FACE ROAD
CONCRETE THRUST BLOCK
5'-0" (MIN.)
6" PIPE WITH MECHANICAL JOINT FITTINGS
UNDISTURBED EARTH OR COMPACTED EMBANKMENT
TEE
6"
CONCRETE THRUST BLOCK. 2000 PSI CONCRETE. BEARING AREA TO BE 14 SF
FLAT STONE OR CONCRETE SLAB
PROVIDE 4 CUBIC FEET OF CRUSHED STONE OR GRAVEL BACKFILL TO AT LEAST 6" ABOVE DRAIN HOLES
COMPACTED SUBGRADE
VALVE ANCHOR – 5CF OF 2000 PSI CONCRETE. USE #4 BARS AROUND VALVE

NOTE:

1. ALL EXCAVATION, BACKFILL, CONCRETE, PIPING, AND STONE IS SUBSIDIARY TO FIRE HYDRANT.

3 C9 FIRE HYDRANT ASSEMBLY DETAIL

SCALE: NONE


20.0'
STEEL POLE
6" REVEAL
SEE SITE PLAN FOR PAVEMENT LOCATIONS
REINFORCED CONCRETE LIGHT POLE BASE

SECTION VIEW

Specifications

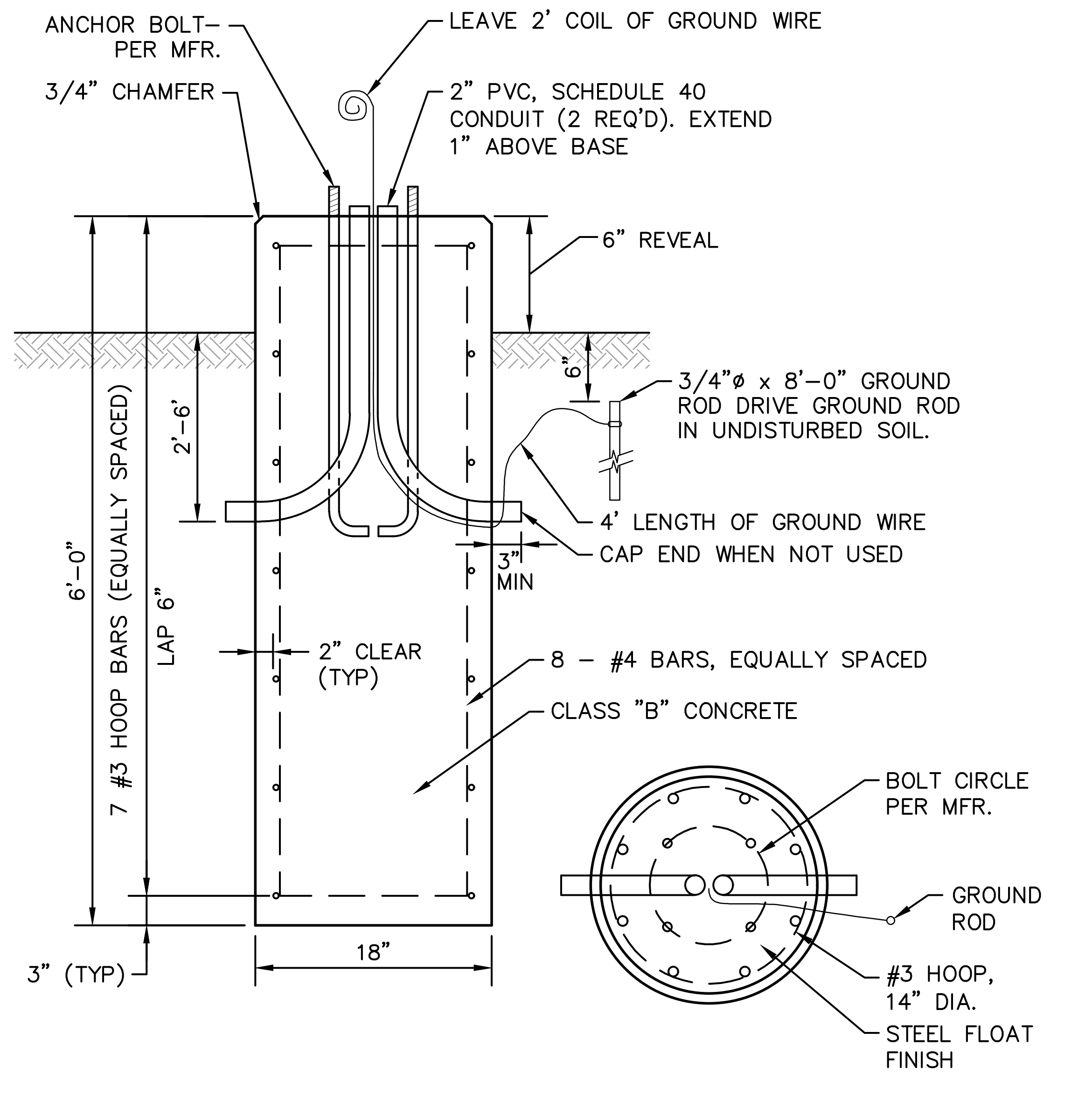
EPA:	0.95 ft² (.09 m²)
Length:	26" (66.0 cm)
Width:	13" (33.0 cm)
Height:	7" (17.8 cm)
Weight (max):	16 lbs (7.25 kg)

NOTE:

1. LIGHT POLES & LUMINAIRES SHOWN FOR BIDDING PURPOSES ONLY. DESIGN INTENT IS TO MATCH EXISTING LIGHTING. CONTRACTOR TO PROVIDE APPROPRIATE LIGHTING AND ELECTRICAL DESIGN DURING THE SUBMITTAL PROCESS.
2. THERE ARE 2 NEW LIGHT POLES W/ BASES & 3 RELOCATED LIGHT POLES IN BASE BID. THERE ARE 2 NEW LIGHT POLES W/ BASES & 1 RELOCATED LIGHT POLE IN ADD ALT #1.

5 C9 TYPICAL LIGHT POLE DETAILS

SCALE: NONE


ANCHOR BOLT– PER MFR.
3/4" CHAMFER
LEAVE 2' COIL OF GROUND WIRE
2" PVC, SCHEDULE 40 CONDUIT (2 REQ'D). EXTEND 1" ABOVE BASE
6" REVEAL
6"
3/4"ø x 8'-0" GROUND ROD DRIVE GROUND ROD IN UNDISTURBED SOIL.
2'-6"
6'-0"
7 #3 HOOP BARS (EQUALLY SPACED)
LAP 6"
4' LENGTH OF GROUND WIRE CAP END WHEN NOT USED
3" MIN
2" CLEAR (TYP)
8 – #4 BARS, EQUALLY SPACED
CLASS "B" CONCRETE
3" (TYP)
18"
BOLT CIRCLE PER MFR.
GROUND ROD
#3 HOOP, 14" DIA.
STEEL FLOAT FINISH

BASE SECTION VIEW

BASE PLAN VIEW

NOTE:

1. ALL REQUIRED NEW 2" PVC CONDUIT, ELECTRIC WIRING, CIRCUITRY, HANDHOLES IS SUBSIDIARY TO POLE BASE. CONTRACTOR IS TO INVESTIGATE EXISTING ELECTRICAL CONFIGURATION AND PROVIDE ALL NEW ELECTRICAL WORK TO CONFORM WITH LOCAL ELECTRICAL CODES.

7 C9 TYPICAL LIGHT POLE BASE DETAILS

SCALE: NONE

WILLIAM R. DAVIDSON
CIVIL
NO. 50036

04/19/22

REV.	REVISION DESCRIPTION	DATE
2	100% DESIGN PLANS ISSUED FOR BIDDING	04/19/22
1	50% DESIGN REVIEW SUBMISSION	02/11/22

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DESIGNED BY	DRAWN BY	CHECKED BY
SMT/JCH	JCH/SCR	WRD

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ORIGINAL DATE: FEBRUARY 11, 2022

SCALE: AS SHOWN

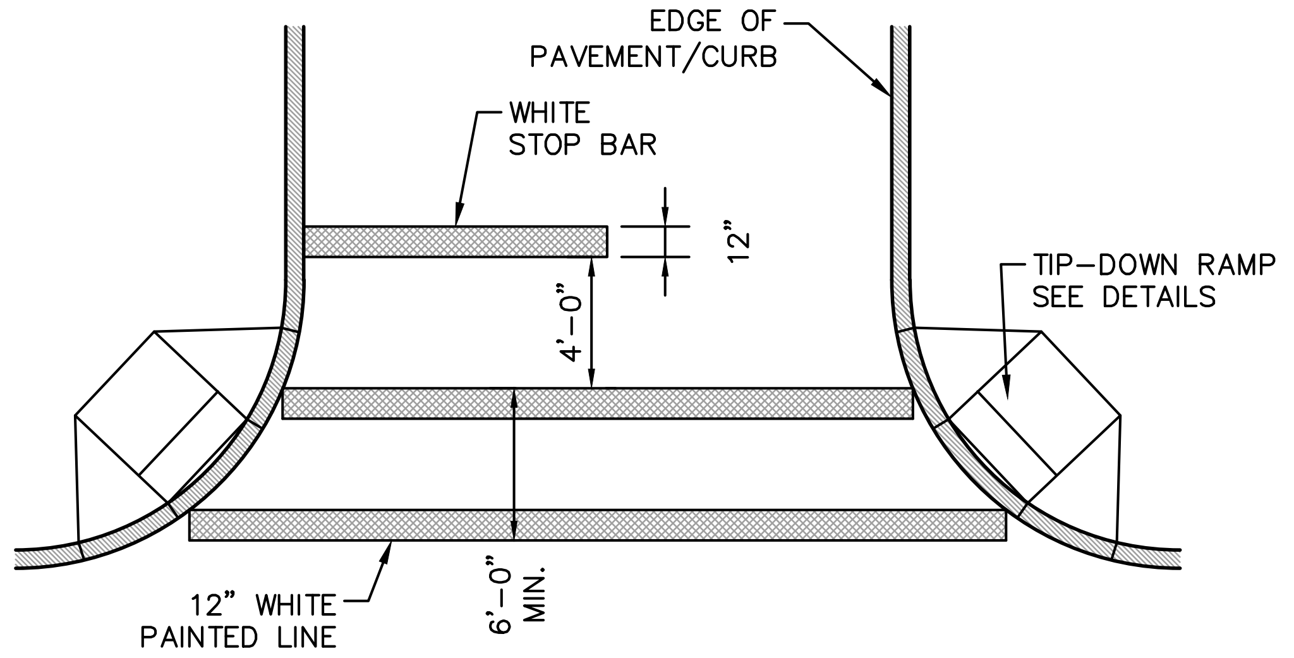
CLIENT
TOWN OF DRACUT
62 ARLINGTON STREET
DRACUT, MA 01826

PROJECT
PEDESTRIAN SAFETY & TRAFFIC CIRCULATION IMPROVEMENT PROJECT
DRACUT PUBLIC SCHOOLS

WATER & ELECTRIC DETAILS

C9

PROJECT NO. 21.926301.00



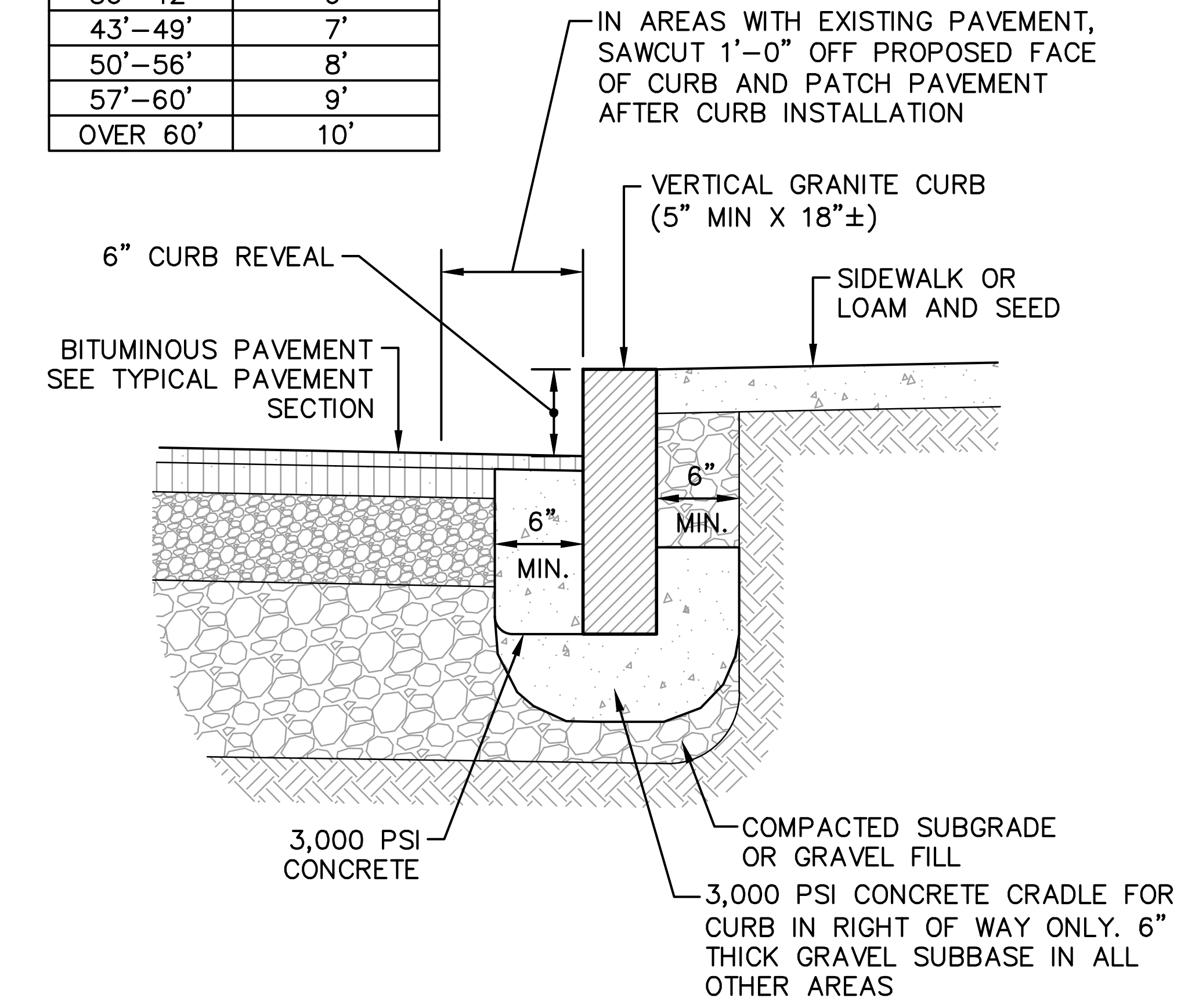
CROSSWALK NOTES:

1. CROSSWALK MARKINGS SHALL CONFORM TO TOWN OF DRACUT STANDARDS. ALL PAINT TO BE RETRO-REFLECTIVE.
2. ALL CROSSWALK LINES TO BE SAME LENGTH AND PROPERLY ALIGNED.
3. SEE PLANS FOR THE CROSSWALK LOCATIONS.

1/C10 PAINTED CROSSWALK DETAIL

SCALE: NONE

RADIUS	MAX LENGTH
21'	3'
22'-28'	4'
29'-35'	5'
36'-42'	6'
43'-49'	7'
50'-56'	8'
57'-60'	9'
OVER 60'	10'

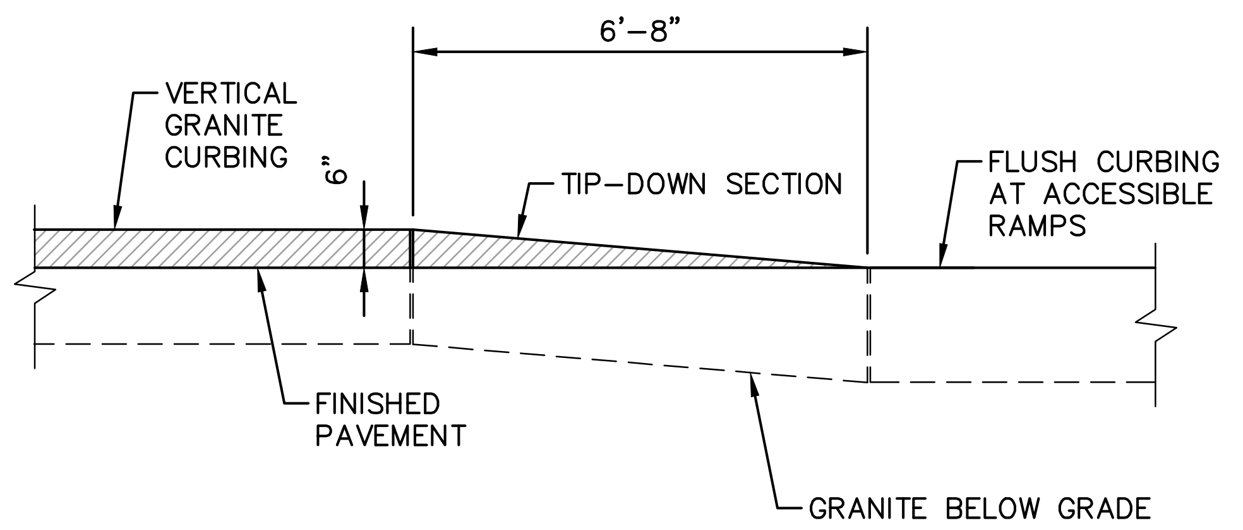

IN AREAS WITH EXISTING PAVEMENT, SAWCUT 1'-0" OFF PROPOSED FACE OF CURB AND PATCH PAVEMENT AFTER CURB INSTALLATION
VERTICAL GRANITE CURB (5" MIN X 18"±)
6" CURB REVEAL
SIDEWALK OR LOAM AND SEED
BITUMINOUS PAVEMENT SEE TYPICAL PAVEMENT SECTION
6" MIN.
6" MIN.
3,000 PSI CONCRETE
COMPACTED SUBGRADE OR GRAVEL FILL
3,000 PSI CONCRETE CRADLE FOR CURB IN RIGHT OF WAY ONLY. 6" THICK GRAVEL SUBBASE IN ALL OTHER AREAS

VERTICAL GRANITE CURB NOTES:

1. MINIMUM LENGTH OF CURB STONES – 3'
2. MAXIMUM LENGTH OF CURB STONES – 10'
3. MAXIMUM LENGTH OF STRAIGHT CURB STONES LAID ON CURVES – SEE CHART.
4. ADJOINING STONES SHALL HAVE THE SAME OR APPROXIMATELY THE SAME LENGTH.
5. CURB ENDS TO BE TIPPED DOWN.
6. ALL CONCRETE, GRAVEL, AND EXCAVATION IS SUBSIDIARY TO CURB.

2/C10 VERTICAL GRANITE CURB DETAIL

SCALE: NONE

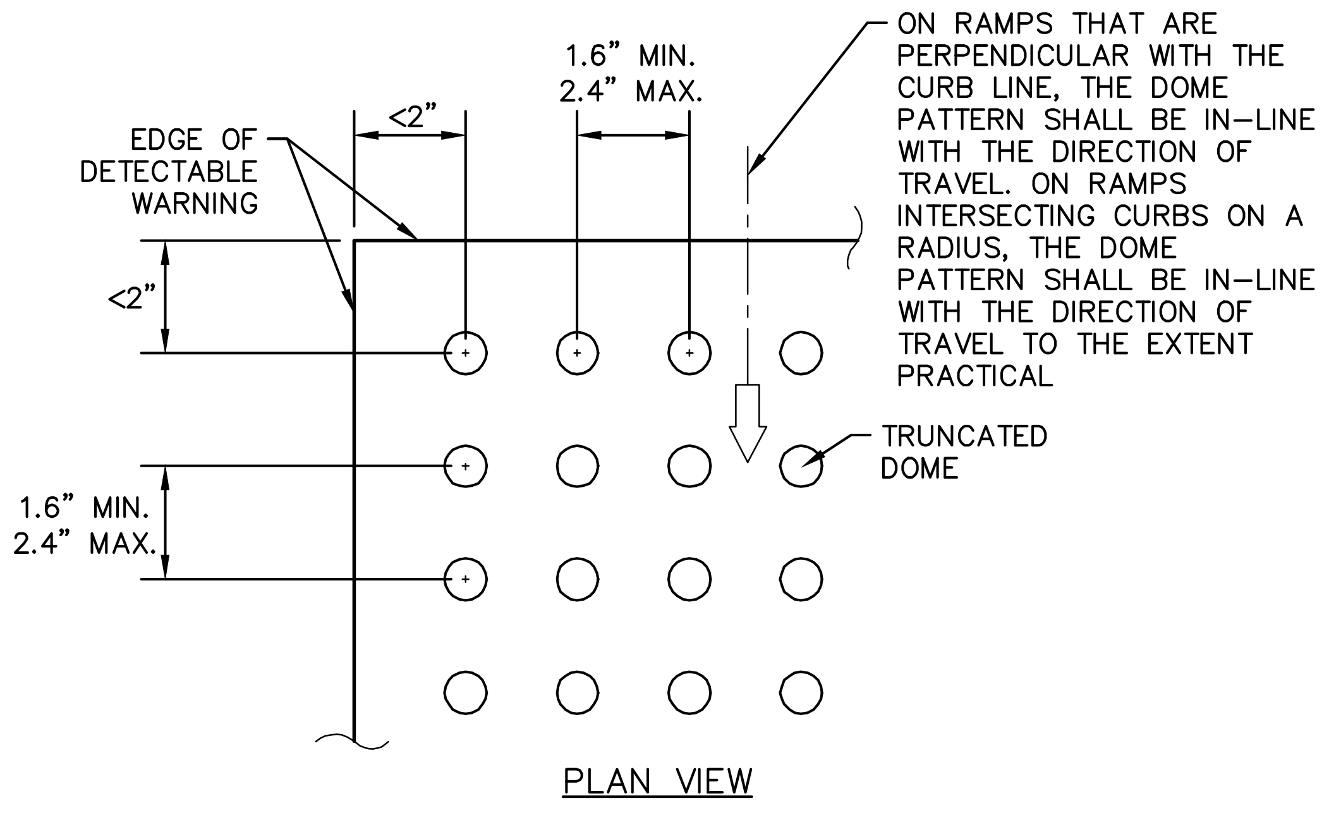


NOTE:

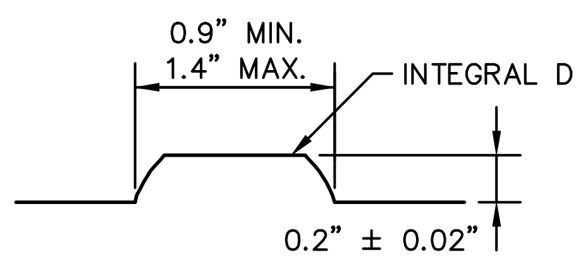
1. REFER TO SITE PLANS FOR CURB TIP-DOWN LOCATIONS

3/C10 VERTICAL GRANITE TIP-DOWN DETAIL

SCALE: NONE


1.6" MIN.
2.4" MAX.
ON RAMPS THAT ARE PERPENDICULAR WITH THE CURB LINE, THE DOME PATTERN SHALL BE IN-LINE WITH THE DIRECTION OF TRAVEL. ON RAMPS INTERSECTING CURBS ON A RADIUS, THE DOME PATTERN SHALL BE IN-LINE WITH THE DIRECTION OF TRAVEL TO THE EXTENT PRACTICAL
EDGE OF DETECTABLE WARNING
<2"
<2"
TRUNCATED DOME
1.6" MIN.
2.4" MAX.

PLAN VIEW



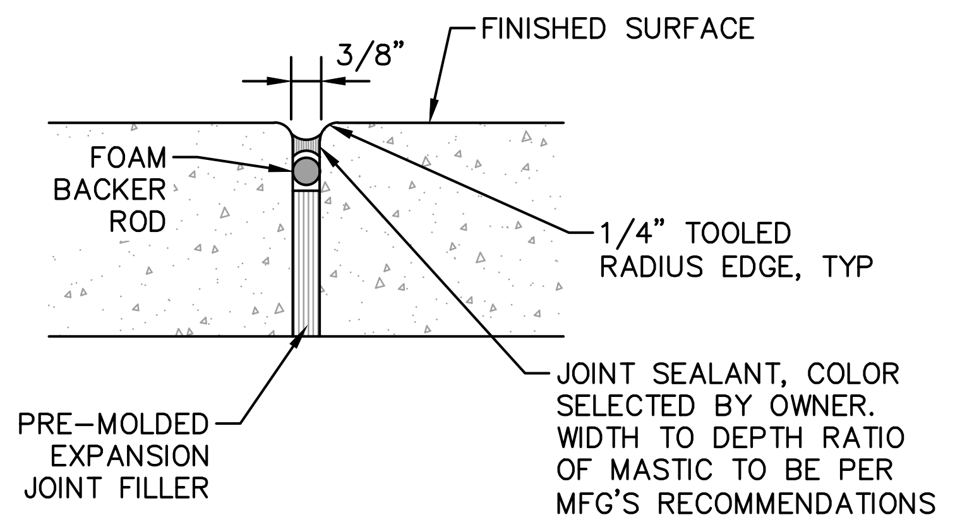
TRUNCATED DOME

DETECTABLE WARNING NOTES:

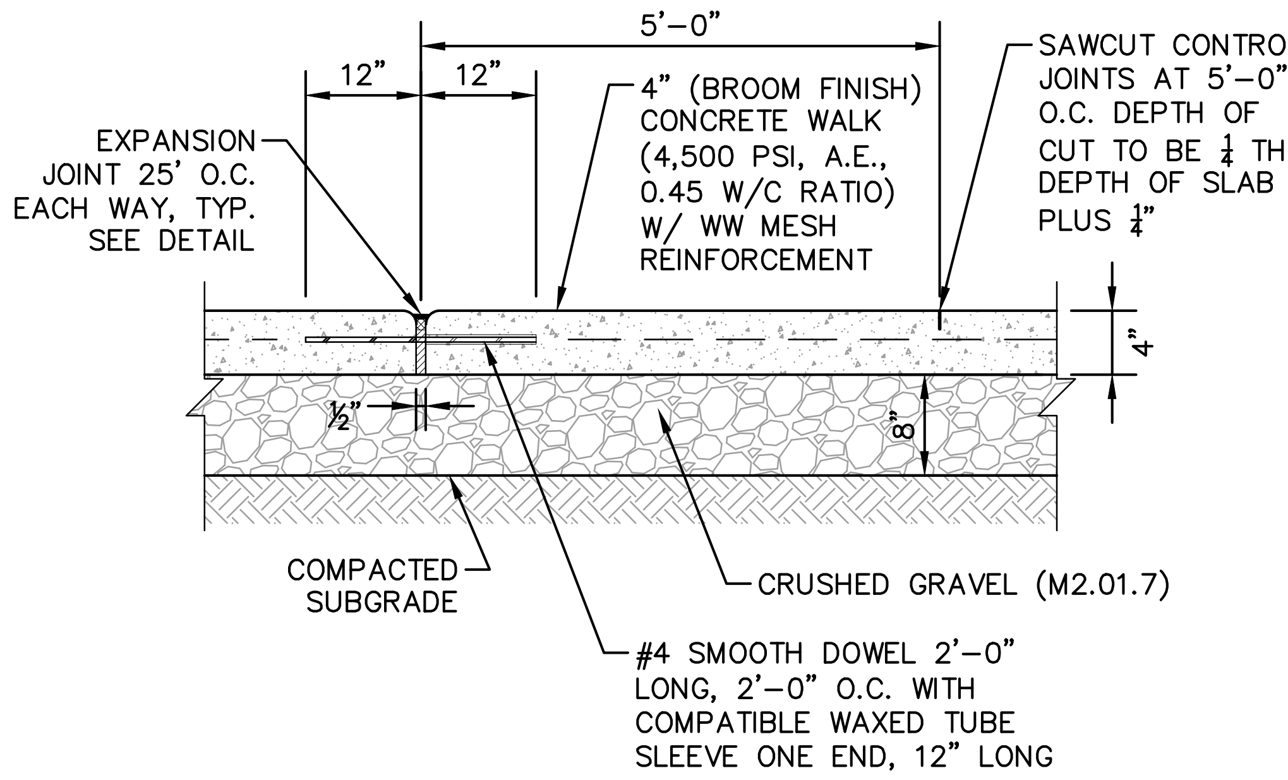
1. BASE-TO-BASE SPACING SHALL BE 0.65" MINIMUM BETWEEN DOMES.
2. ALL SIDEWALK CURB RAMPS SHALL HAVE DETECTABLE WARNING SURFACES THAT EXTEND THE FULL WIDTH OF THE RAMP AND IN THE DIRECTION OF TRAVEL 24 INCHES FROM THE BACK OF CURB.
3. THE TOP WIDTH OF THE DOME SHALL BE A MINIMUM OF 50% AND A MAXIMUM OF 65% OF THE BASE DIAMETER.
4. WARNING PANELS TO BE CAST IRON. COLOR YELLOW TO MATCH EXISTING.

4/C10 TYPICAL DETECTABLE WARNING DETAILS

SCALE: NONE


3/8"
FINISHED SURFACE
FOAM BACKER ROD
1/4" TOOLED RADIUS EDGE, TYP
PRE-MOLDED EXPANSION JOINT FILLER
JOINT SEALANT, COLOR SELECTED BY OWNER. WIDTH TO DEPTH RATIO OF MASTIC TO BE PER MFG'S RECOMMENDATIONS

EXPANSION JOINT DETAIL


5'-0"
12"
12"
EXPANSION JOINT 25' O.C. EACH WAY, TYP. SEE DETAIL
4" (BROOM FINISH) CONCRETE WALK (4,500 PSI, A.E., 0.45 W/C RATIO) W/ WW MESH REINFORCEMENT
SAWCUT CONTROL JOINTS AT 5'-0" O.C. DEPTH OF CUT TO BE ¼ THE DEPTH OF SLAB PLUS ¼"
4"
½"
8"
COMPACTED SUBGRADE
CRUSHED GRAVEL (M2.01.7)
#4 SMOOTH DOWEL 2'-0" LONG, 2'-0" O.C. WITH COMPATIBLE WAXED TUBE SLEEVE ONE END, 12" LONG

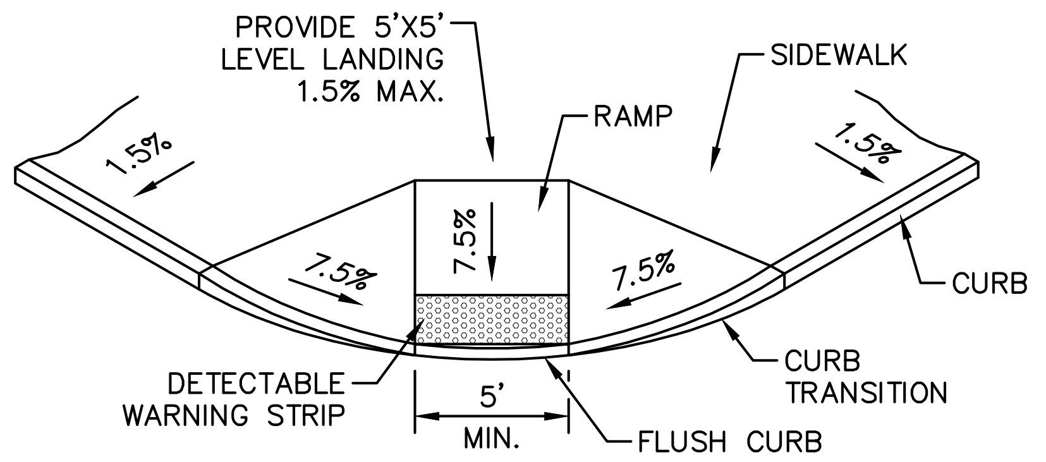
TYPICAL SECTION

CONCRETE WALK NOTES:

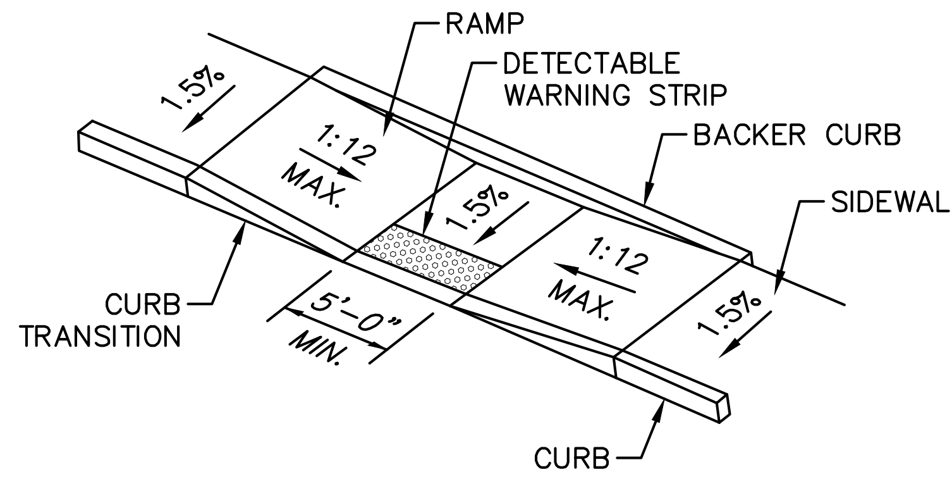
1. THE CONTRACTOR SHALL INSTALL EXPANSION JOINTS EVERY 25'-0" ON CENTER AND CONTROL JOINTS AT 5'-0" ON CENTER.
2. THE CONTROL JOINTS SHALL BE SAWCUT AS SHOWN IN THE DETAIL ABOVE OR TOOLED CONTROL JOINTS WITH A 1/4" RADIUS
3. ALL GRAVEL, EXCAVATION, AND WW MESH REINFORCEMENT IS SUBSIDIARY TO CONCRETE WALKWAY.

5/C10 TYPICAL CONCRETE WALKWAY DETAIL

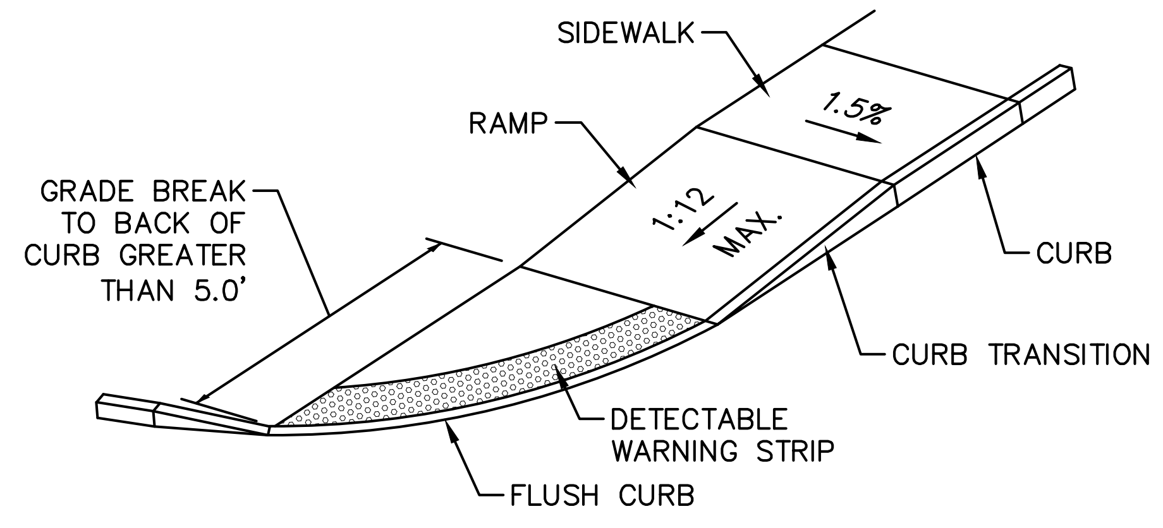
SCALE: NONE



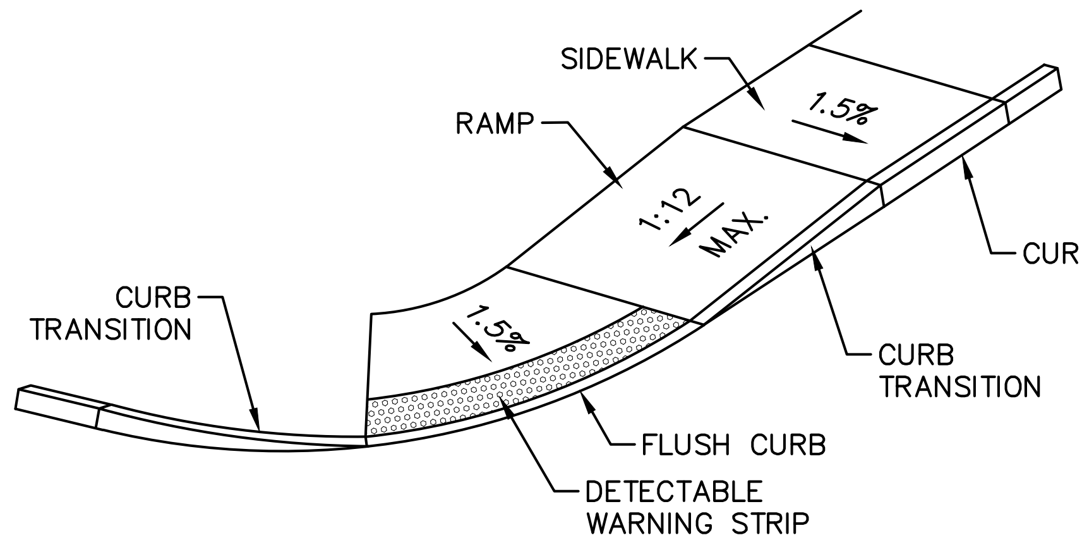
RAMP DETAIL "A"



RAMP DETAIL "B"



RAMP DETAIL "C"



RAMP DETAIL "D"

SIDEWALK RAMP NOTES:

1. THE MAXIMUM ALLOWABLE SIDEWALK AND TIP-DOWN RAMP CROSS SLOPE SHALL BE 2.0% (1% MIN.)
2. THE MAXIMUM ALLOWABLE SLOPE OF THE ACCESSIBLE ROUTE EXCLUDING TIP-DOWN RAMPS SHALL BE 5%.
3. THE MAXIMUM ALLOWABLE SLOPE OF ACCESSIBLE ROUTE AT TIP-DOWN RAMPS SHALL BE 1:12 (8.3%).
4. FLARED SIDE SLOPES SHALL BE INSTALLED WITH A MAXIMUM SLOPE OF 10% MEASURED PARALLEL TO THE CURB LINE.
5. A MINIMUM OF 4 FEET CLEARANCE SHALL BE PROVIDED BETWEEN ANY PERMANENT OBSTACLE IN ACCESSIBLE ROUTE.
6. RAMP, CURB AND ADJACENT PAVEMENTS SHALL BE GRADED TO PREVENT PONDING.
7. AN ADA DETECTABLE WARNING TRUNCATED DOME PANEL FINISH SHALL TRANSVERSE THE SLOPE OF THE TIP-DOWN RAMP. DETECTIBLE WARNING PANELS SHALL BE INSTALLED PERPENDICULAR TO THE ACCESSIBLE ROUTE.
8. CURBING SHALL BE SET FLUSH WHERE TIP-DOWN RAMP ABUTS PAVEMENT.
9. MAINTAIN THE NORMAL GUTTER PROFILE THROUGHOUT THE RAMP AREA. INTERCEPT DRAINAGE ALONG THE CURB IN ADVANCE OF THE RAMP.

6/C10 ACCESSIBLE TIP-DOWN RAMPS

SCALE: NONE

WILLIAM R. DAVIDSON
CIVIL
NO. 50036

04/19/22

REV.	REVISION DESCRIPTION	DATE
2	100% DESIGN PLANS ISSUED FOR BIDDING	04/19/22
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www.hoyletanner.com

SCALE:	ORIGINAL DATE:	DESIGNED BY	DRAWN BY	CHECKED BY
AS SHOWN	FEBRUARY 11, 2022	SMT/JCH	JCH/SCR	WRD

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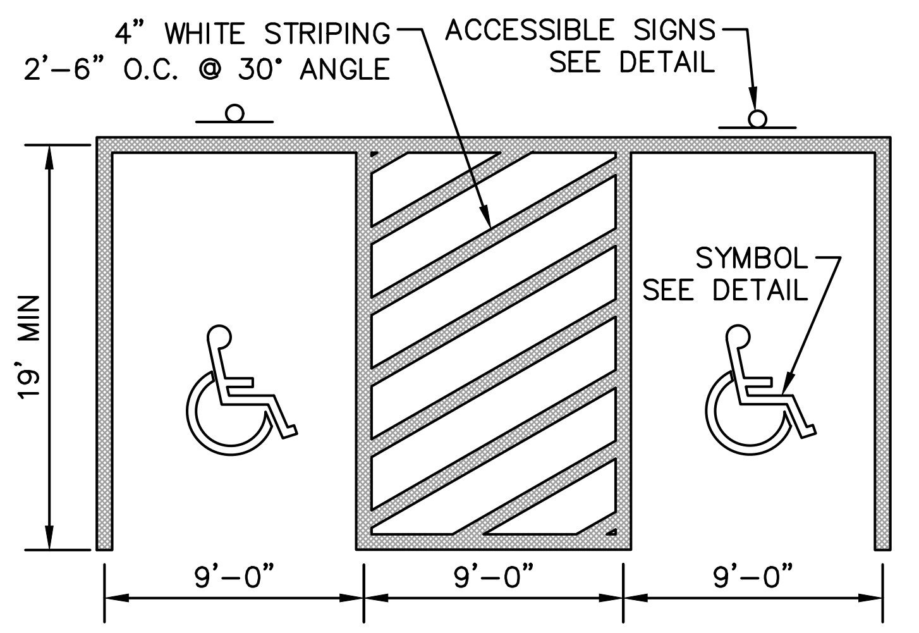
TOWN OF DRACUT
62 ARLINGTON STREET
DRACUT, MA 01826

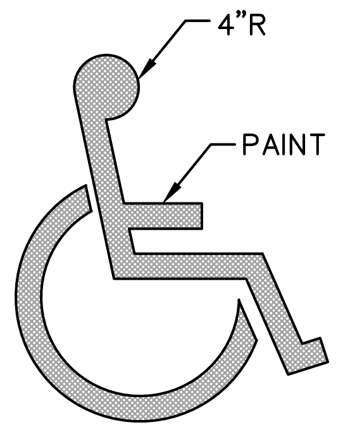
PROJECT
PEDESTRIAN SAFETY & TRAFFIC
CIRCULATION IMPROVEMENT PROJECT
DRACUT PUBLIC SCHOOLS

SITE DETAILS 1

C10

PROJECT NO. 21.926301.00





SYMBOL DETAIL

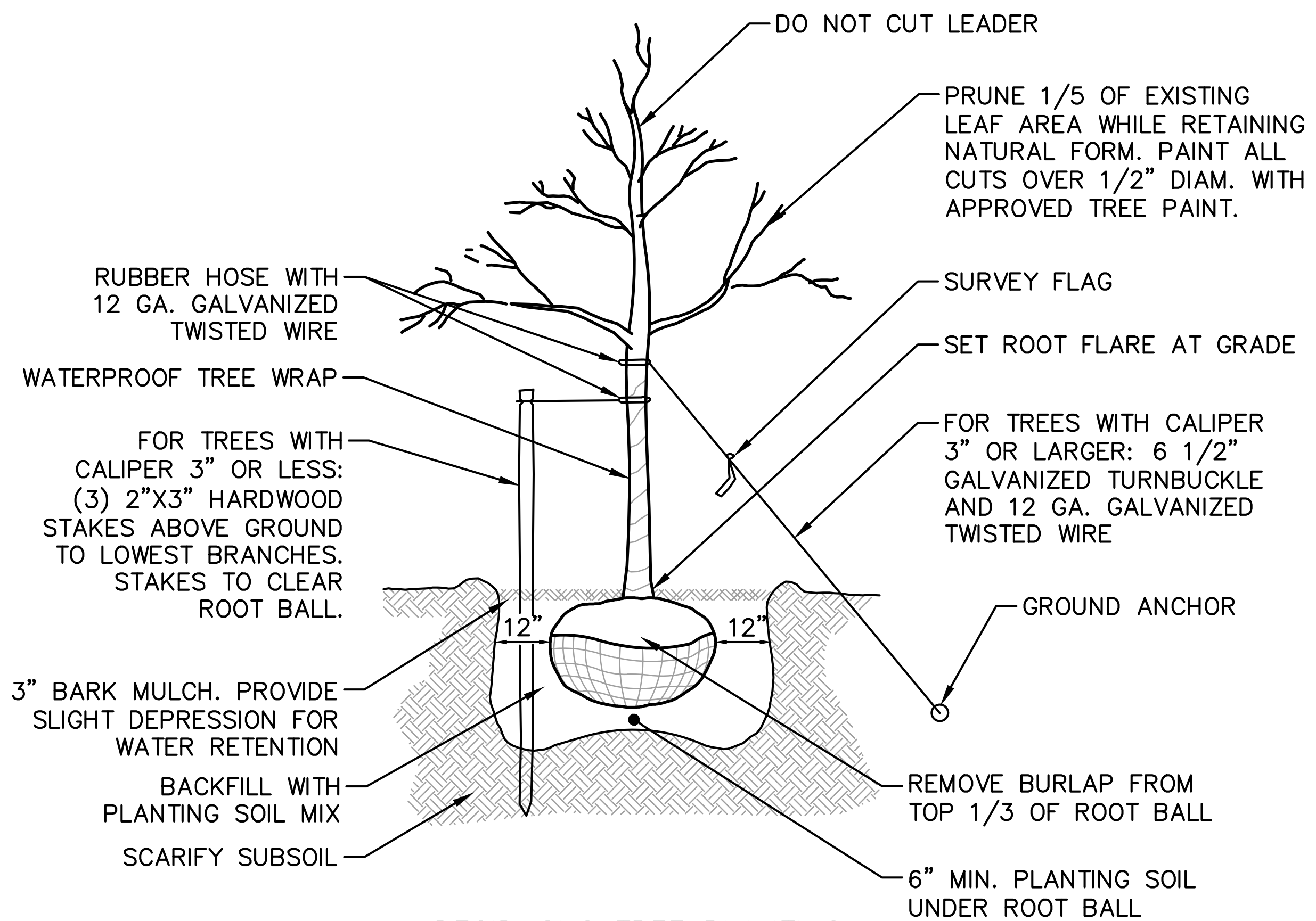
STALL LAYOUT NOTES:

1. ALL PAVEMENT MARKINGS SHALL BE IN CONFORMANCE WITH THESE STANDARDS AND THE CURRENT EDITION OF MUTCD.
2. WIDTH OF LINES SHALL VARY NO MORE THAN ± 1/4 INCH FROM THAT SPECIFIED.
3. THE WET FILM THICKNESS OF A PAINTED LINE SHALL BE A MINIMUM OF 20 MILS THROUGHOUT THE ENTIRE WIDTH AND LENGTH OF LINE SPECIFIED. OVERSPRAY SHALL BE KEPT TO AN ABSOLUTE MINIMUM. ALL PAINT TO BE RETRO-REFLECTIVE.
4. BROKEN LINES SHALL BEGIN AND END WITH THE NEAREST FULL CYCLE OF BROKEN LINE.
5. SOLID LONGITUDINAL LINES SHALL BEGIN AND END WITHIN ± 2 INCHES OFF A LAYOUT SYMBOL INDICATING THE END OF THE LINE, OR WITH A FULL CYCLE OF BROKEN LINE (IF APPROPRIATE).

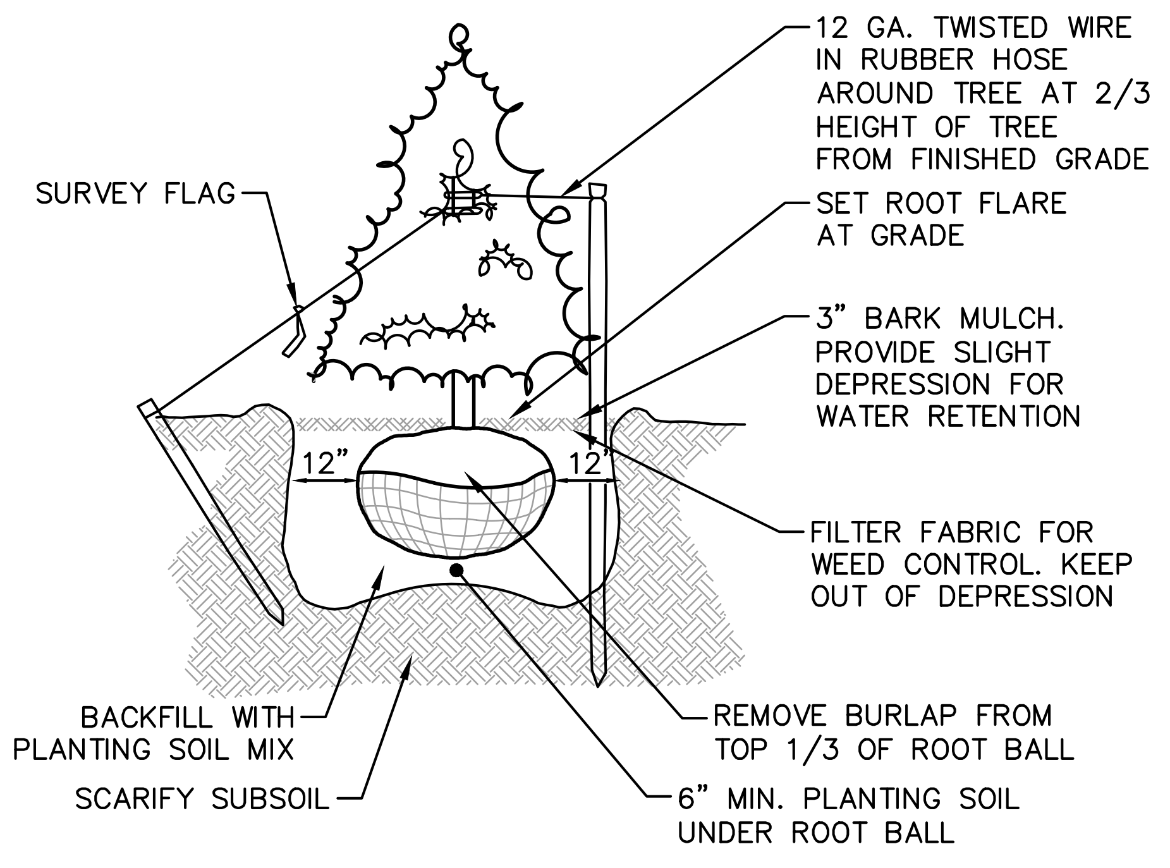
1
C11

ACCESSIBLE PARKING STALL LAYOUT

SCALE: NONE


DO NOT CUT LEADER
PRUNE 1/5 OF EXISTING LEAF AREA WHILE RETAINING NATURAL FORM. PAINT ALL CUTS OVER 1/2" DIAM. WITH APPROVED TREE PAINT.
SURVEY FLAG
SET ROOT FLARE AT GRADE
FOR TREES WITH CALIPER 3" OR LARGER: 6 1/2" GALVANIZED TURNBUCKLE AND 12 GA. GALVANIZED TWISTED WIRE
GROUND ANCHOR
REMOVE BURLAP FROM TOP 1/3 OF ROOT BALL
6" MIN. PLANTING SOIL UNDER ROOT BALL
RUBBER HOSE WITH 12 GA. GALVANIZED TWISTED WIRE
WATERPROOF TREE WRAP
FOR TREES WITH CALIPER 3" OR LESS: (3) 2"X3" HARDWOOD STAKES ABOVE GROUND TO LOWEST BRANCHES. STAKES TO CLEAR ROOT BALL.
3" BARK MULCH. PROVIDE SLIGHT DEPRESSION FOR WATER RETENTION
BACKFILL WITH PLANTING SOIL MIX
SCARIFY SUBSOIL
12"
12"

DECIDUOUS TREE PLANTING


SURVEY FLAG
12 GA. TWISTED WIRE IN RUBBER HOSE AROUND TREE AT 2/3 HEIGHT OF TREE FROM FINISHED GRADE
SET ROOT FLARE AT GRADE
3" BARK MULCH. PROVIDE SLIGHT DEPRESSION FOR WATER RETENTION
FILTER FABRIC FOR WEED CONTROL. KEEP OUT OF DEPRESSION
REMOVE BURLAP FROM TOP 1/3 OF ROOT BALL
6" MIN. PLANTING SOIL UNDER ROOT BALL
BACKFILL WITH PLANTING SOIL MIX
SCARIFY SUBSOIL
12"
12"

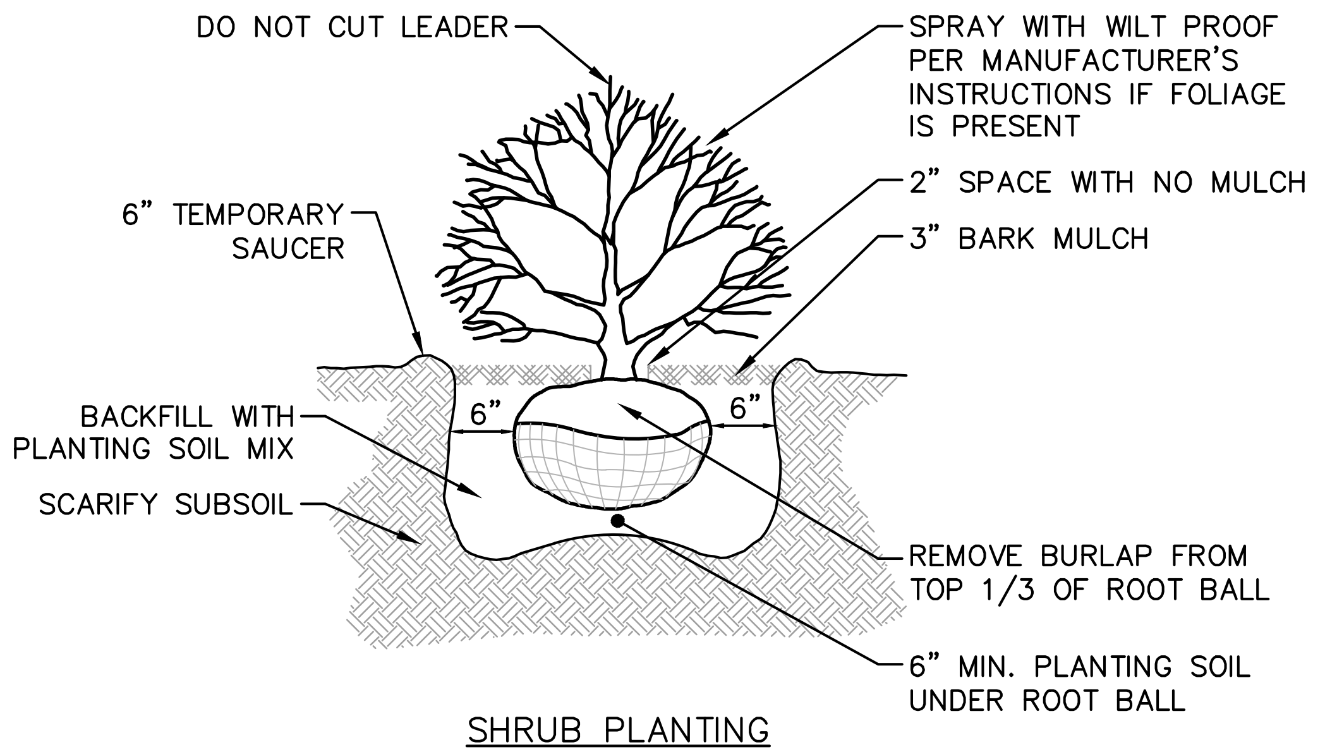
CONIFEROUS TREE PLANTING

FOR TREES 5' IN HEIGHT OR GREATER:

1. PROVIDE (3) 12 GA. GALVANIZED GUY WIRES @ 120 DEGREE SPACING WITH (6) 1/2" GALVANIZED TURNBUCKLE WIRE IN RUBBER HOSE AROUND TREE.
2. ATTACH TO TREE @ 1/2-2/3 HEIGHT OF TREE ABOVE GRADE.
3. ANCHOR WITH 2"X3' HARDWOOD STAKE BURIED BELOW GRADE AND CLEAR OF ROOT BALL.

FOR TREES LESS THAN 5' IN HEIGHT:

1. PROVIDE (3) 2"X3' HARDWOOD STAKES @ 120 DEGREE SPACING, MIN. 36" IN GROUND AND CLEAR OF ROOT BALL.

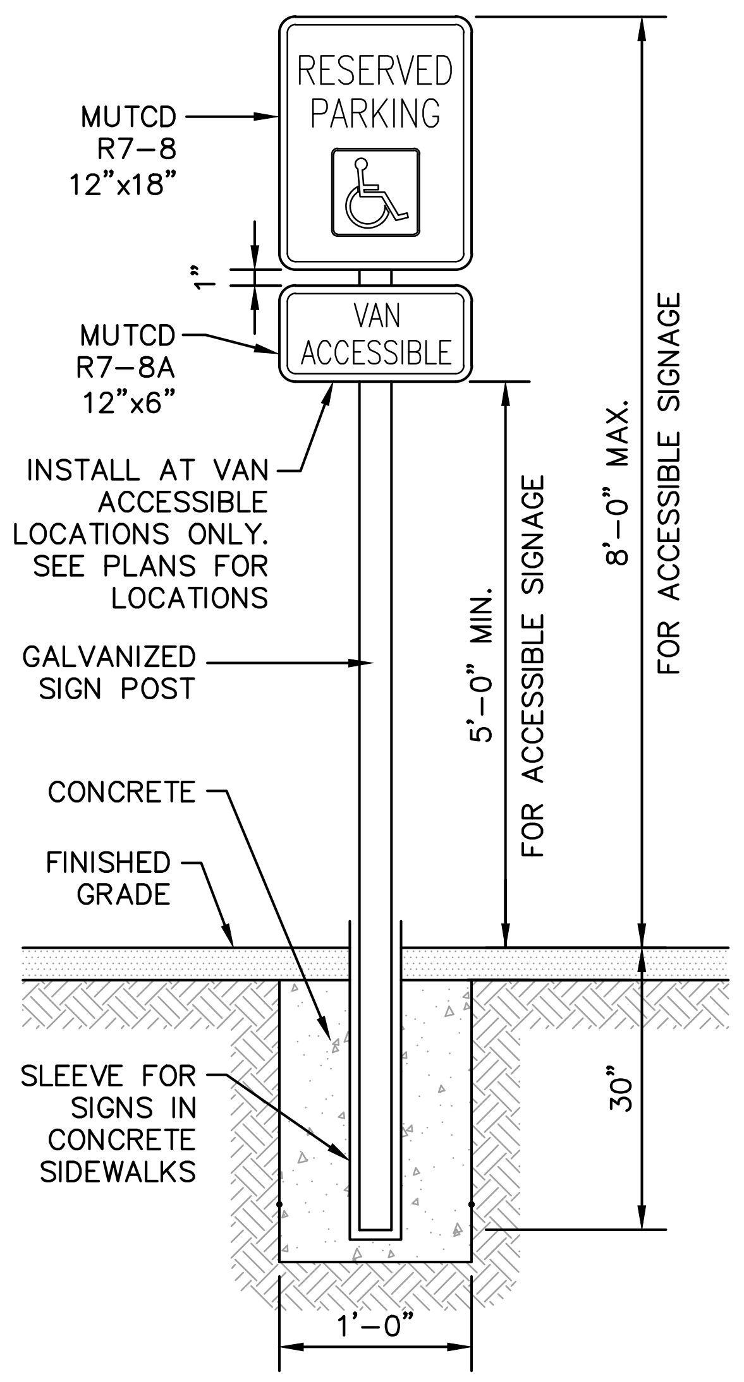

DO NOT CUT LEADER
SPRAY WITH WILT PROOF PER MANUFACTURER'S INSTRUCTIONS IF FOLIAGE IS PRESENT
2" SPACE WITH NO MULCH
3" BARK MULCH
6" TEMPORARY SAUCER
BACKFILL WITH PLANTING SOIL MIX
SCARIFY SUBSOIL
REMOVE BURLAP FROM TOP 1/3 OF ROOT BALL
6" MIN. PLANTING SOIL UNDER ROOT BALL
6"
6"

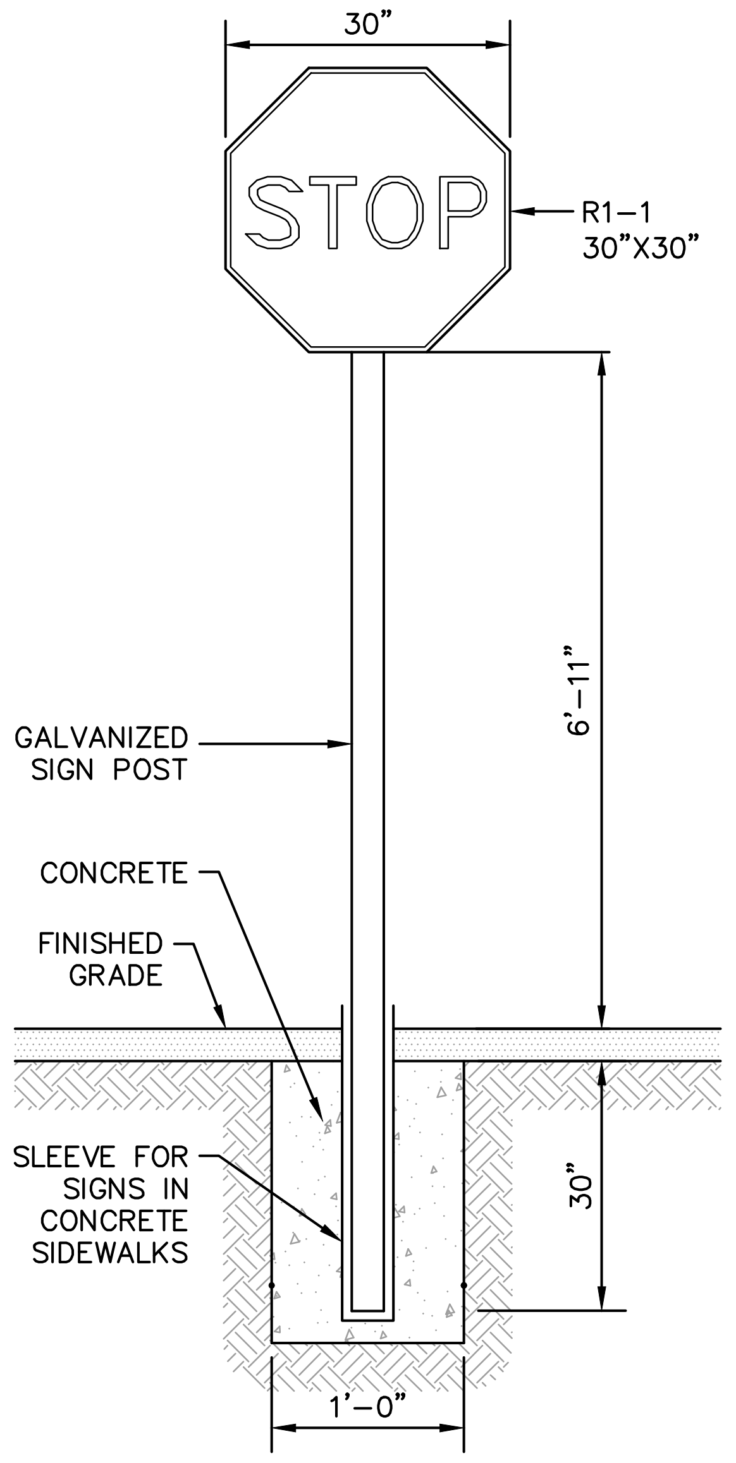
SHRUB PLANTING

3
C11

TYPICAL TREE & SHRUB PLANTING DETAILS

SCALE: NONE


RESERVED PARKING
MUTCD R7-8 12"x18"
1"
VAN ACCESSIBLE
MUTCD R7-8A 12"x6"
INSTALL AT VAN ACCESSIBLE LOCATIONS ONLY. SEE PLANS FOR LOCATIONS
GALVANIZED SIGN POST
CONCRETE
FINISHED GRADE
SLEEVE FOR SIGNS IN CONCRETE SIDEWALKS
5'-0" MIN. FOR ACCESSIBLE SIGNAGE
8'-0" MAX. FOR ACCESSIBLE SIGNAGE
30"
1'-0"



SIGN NOTES:

1. ALL SIGNAGE SHALL BE IN CONFORMANCE WITH THE CURRENT EDITION OF THE M.U.T.C.D.
2. ACCESSIBLE PARKING SIGN TO BE INSTALLED AT HEAD OF ALL DESIGNATED PARKING SPACES.
3. SIGNS IN CONCRETE AREAS SHALL BE INSTALLED WITH AN ANCHOR SLEEVE.
4. REFER TO SITE PLANS FOR TYPE OF SIGN AND SIGN INSTALLATION LOCATIONS.
5. ALL EXCAVATION AND CONCRETE IS SUBSIDIARY TO SIGNS.

2
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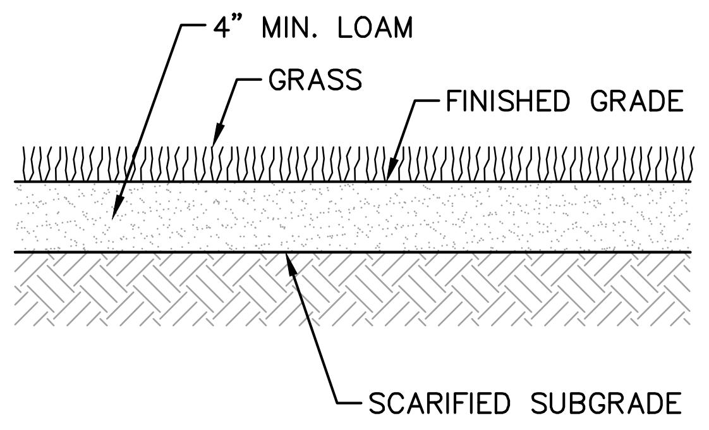
TYPICAL SIGN MOUNTING DETAILS

SCALE: NONE



4
C11

GRASS PLANTING DETAIL

SCALE: NONE

WILLIAM R.
DAVIDSON
CIVIL
NO. 50036

04/19/22

REV.	REVISION DESCRIPTION	DATE
2	100% DESIGN PLANS ISSUED FOR BIDDING	04/19/22
1	50% DESIGN REVIEW SUBMISSION	02/11/22

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SCALE:	ORIGINAL DATE:	DESIGNED BY	DRAWN BY	CHECKED BY
AS SHOWN	FEBRUARY 11, 2022	SMT/JCH	JCH/SCR	WRD

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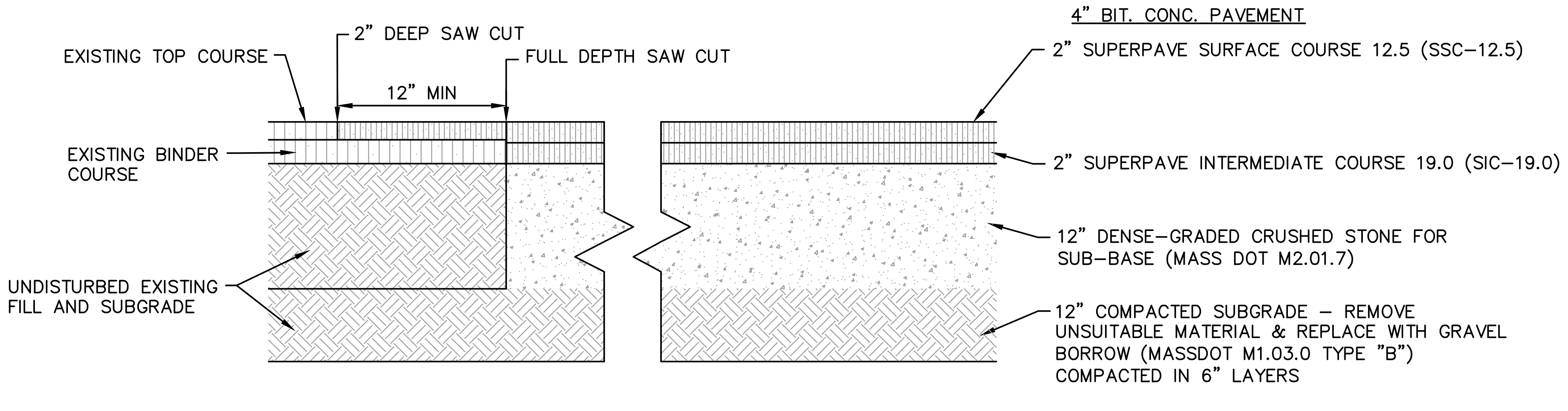
PROJECT
PEDESTRIAN SAFETY & TRAFFIC
CIRCULATION IMPROVEMENT PROJECT
DRACUT PUBLIC SCHOOLS

SITE DETAILS 2

C11

PROJECT NO. 21.926301.00


4" BIT. CONC. PAVEMENT
EXISTING TOP COURSE
2" DEEP SAW CUT
FULL DEPTH SAW CUT
12" MIN
EXISTING BINDER COURSE
UNDISTURBED EXISTING FILL AND SUBGRADE
2" SUPERPAVE SURFACE COURSE 12.5 (SSC-12.5)
2" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0)
12" DENSE-GRADED CRUSHED STONE FOR SUB-BASE (MASS DOT M2.01.7)
12" COMPACTED SUBGRADE - REMOVE UNSUITABLE MATERIAL & REPLACE WITH GRAVEL BORROW (MASSDOT M1.03.0 TYPE "B") COMPACTED IN 6" LAYERS

BITUMINOUS CONC. PAVEMENT SECTION

NOTES:

1. COMPACT SUBGRADE AND GRAVEL BASE TO 95% MODIFIED PROCTOR DENSITY.
2. ALL ASPHALT EMULSION FOR TACK COAT IS SUBSIDIARY TO PAVEMENT ITEMS.

1 C12 **TYPICAL PAVEMENT SECTION**

SCALE: NONE

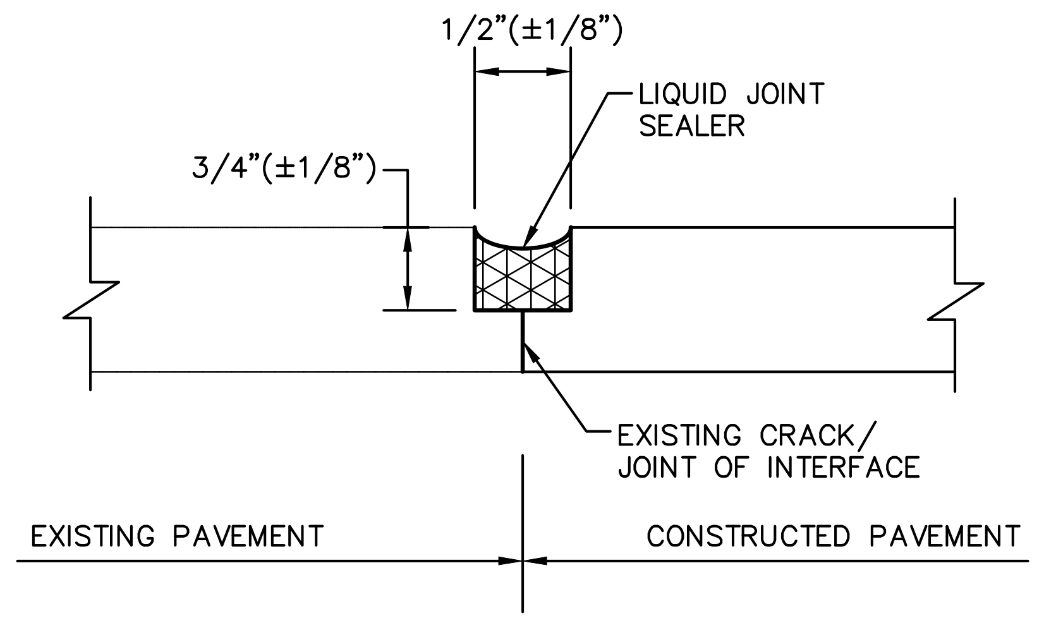
PAVEMENT NOTES:

FULL DEPTH RECLAMATION:

SURFACE COURSE:	2" SUPERPAVE SURFACE COURSE – 12.5 (SSC-12.5) OVER ASPHALT EMULSION FOR TACK COAT (RS-1H) OVER
BASE COURSE:	2" SUPERPAVE INTERMEDIATE COURSE – 19.0 (SIC-19.0) OVER 4" LIQUID ASPHALT STABILIZED RECLAIMED BORROW BASE COURSE OVER
SUBBASE:	12" RECLAIMED PAVEMENT BORROW SUBBASE COURSE
RECLAMATION:	PROPOSED RECLAMATION DEPTH 12" FOR 50/50 BLEND OF ASPHALT WITH UNDERLYING GRAVEL SUBBASE

MICROMILLING AND OVERLAY:

SURFACE COURSE:	1.5" SUPERPAVE SURFACE COURSE – 12.5 (SSC-12.5) OVER ASPHALT EMULSION FOR TACK COAT (RS-1H) OVER
MICROMILLING:	VARIABLE DEPTH PAVEMENT MICROMILLING

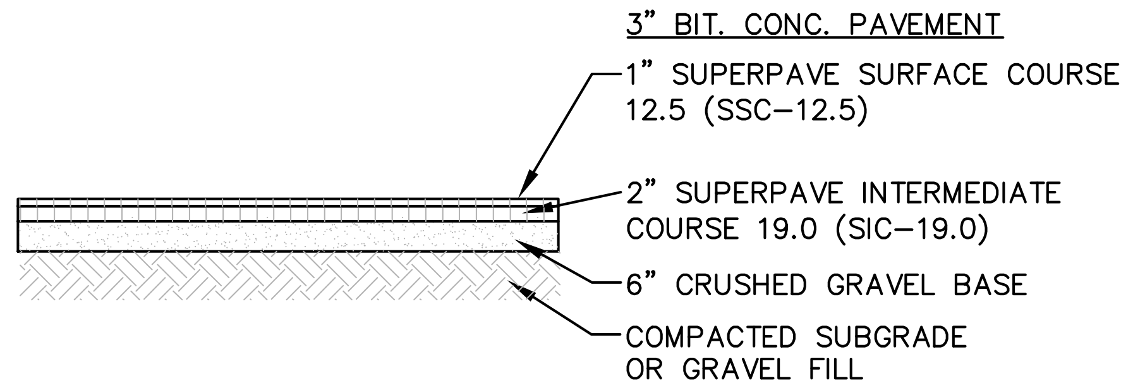


NOTE:

1. LIQUID JOINT SEALANT IS SUBSIDIARY TO SAWCUTS.

2 C12 **SAWCUT CONTROL JOINT DETAIL**

SCALE: NONE

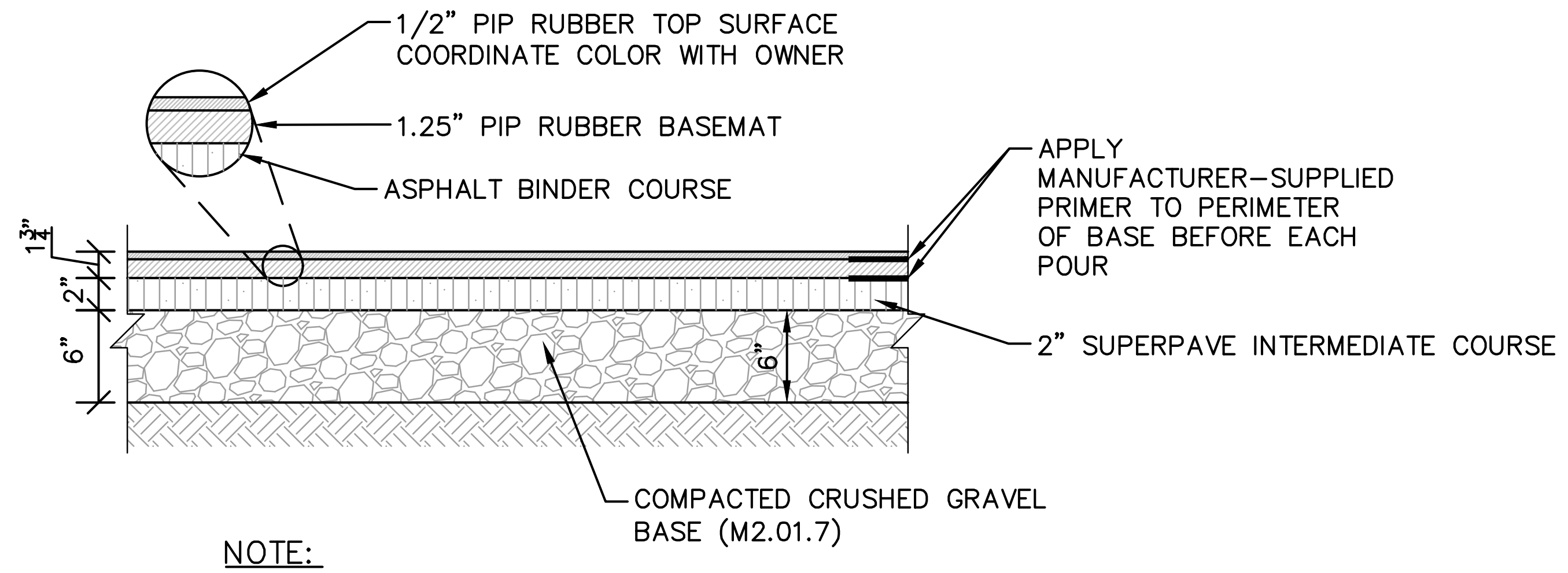

3" BIT. CONC. PAVEMENT
1" SUPERPAVE SURFACE COURSE 12.5 (SSC-12.5)
2" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0)
6" CRUSHED GRAVEL BASE
COMPACTED SUBGRADE OR GRAVEL FILL

NOTE:

1. COMPACT SUBGRADE AND GRAVEL BASE TO 95% MODIFIED PROCTOR DENSITY.
2. ALL EXCAVATION AND GRAVEL BASE IS SUBSIDIARY TO BITUMINOUS WALKWAY.

3 C12 **TYPICAL BITUMINOUS WALKWAY SECTION**

SCALE: NONE

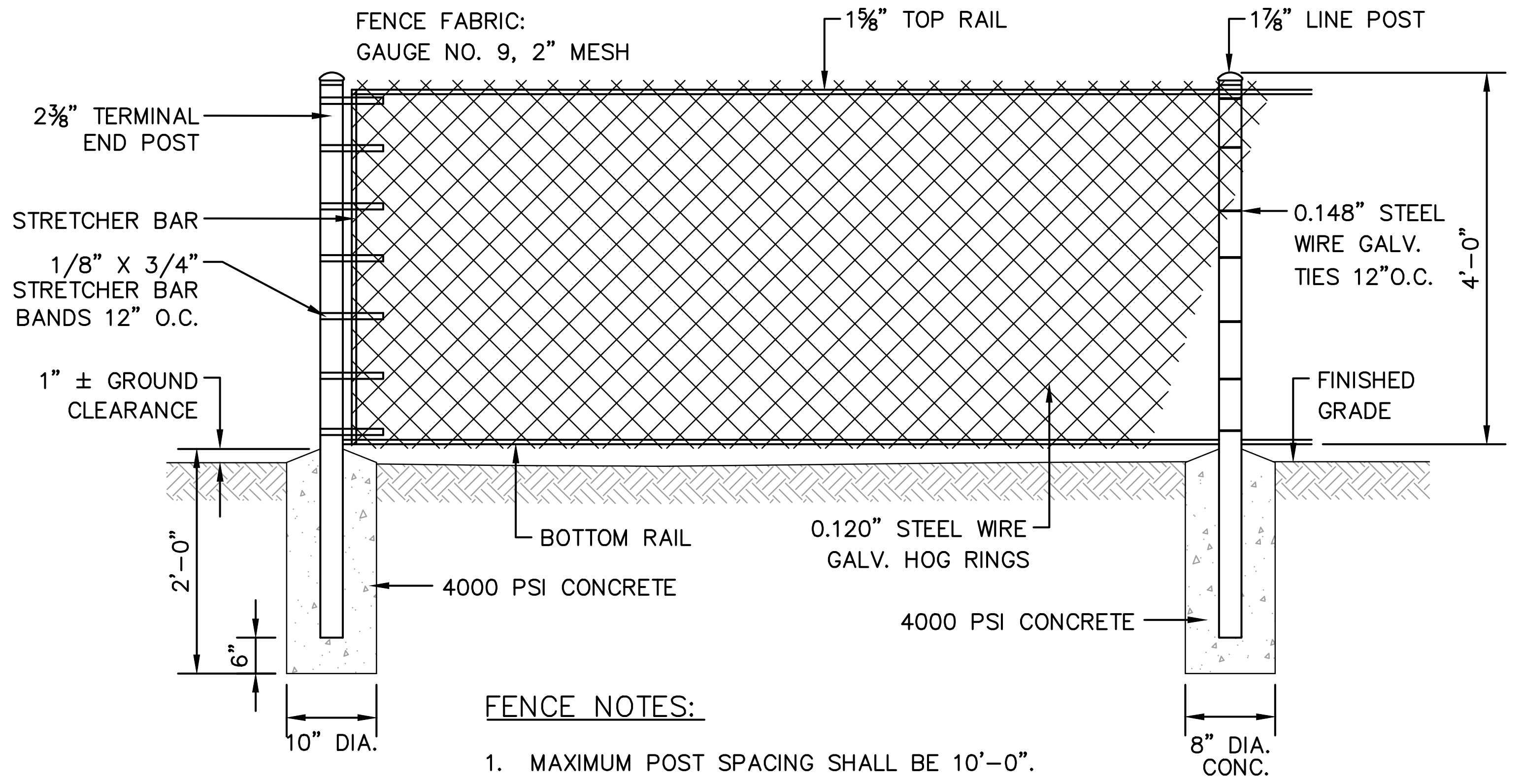

1/2" PIP RUBBER TOP SURFACE COORDINATE COLOR WITH OWNER
1.25" PIP RUBBER BASEMAT
ASPHALT BINDER COURSE
APPLY MANUFACTURER-SUPPLIED PRIMER TO PERIMETER OF BASE BEFORE EACH POUR
1¾"
2"
6"
6"
2" SUPERPAVE INTERMEDIATE COURSE
COMPACTED CRUSHED GRAVEL BASE (M2.01.7)

NOTE:

1. ALL EXCAVATION, GRAVEL BASE, AND PAVEMENT IS SUBSIDIARY TO PIP RUBBER SAFETY SURFACE.
2. INSTALLATION OF PIP RUBBER SURFACE IS PROPOSED AS PART OF ADD ALT #3.

4 C12 **POURED-IN-PLACE (PIP) RUBBER SAFETY SURFACE**

SCALE: NONE

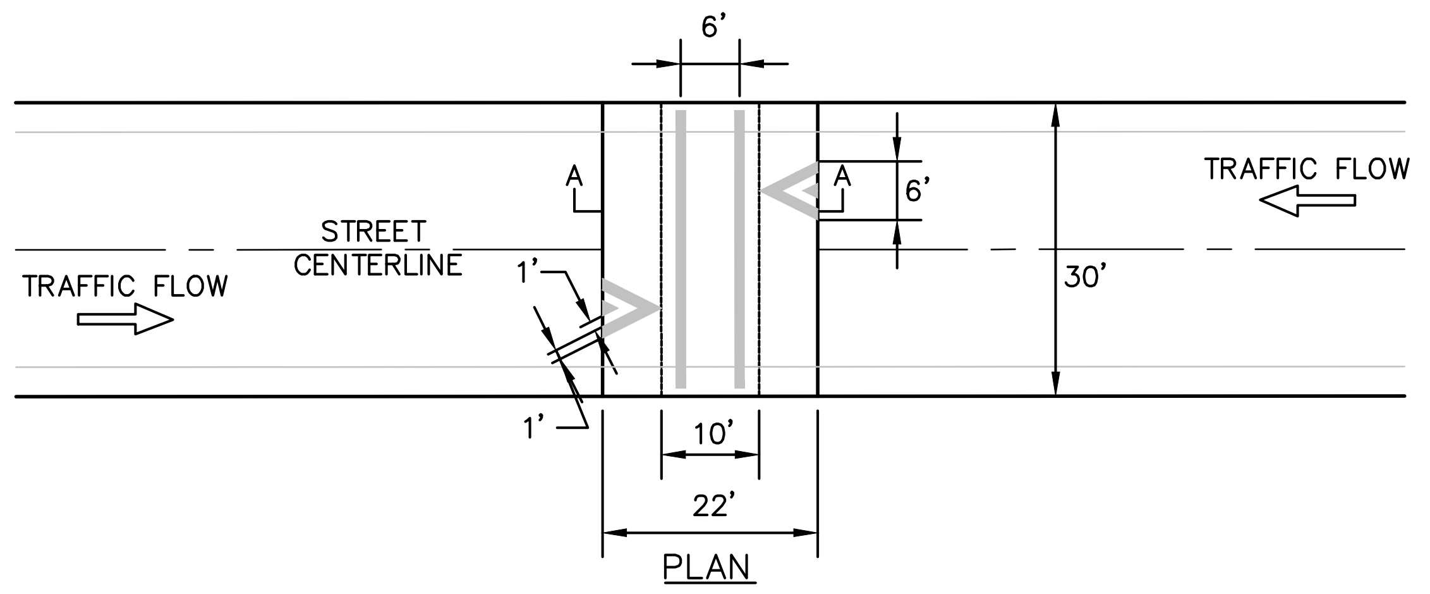


FENCE NOTES:

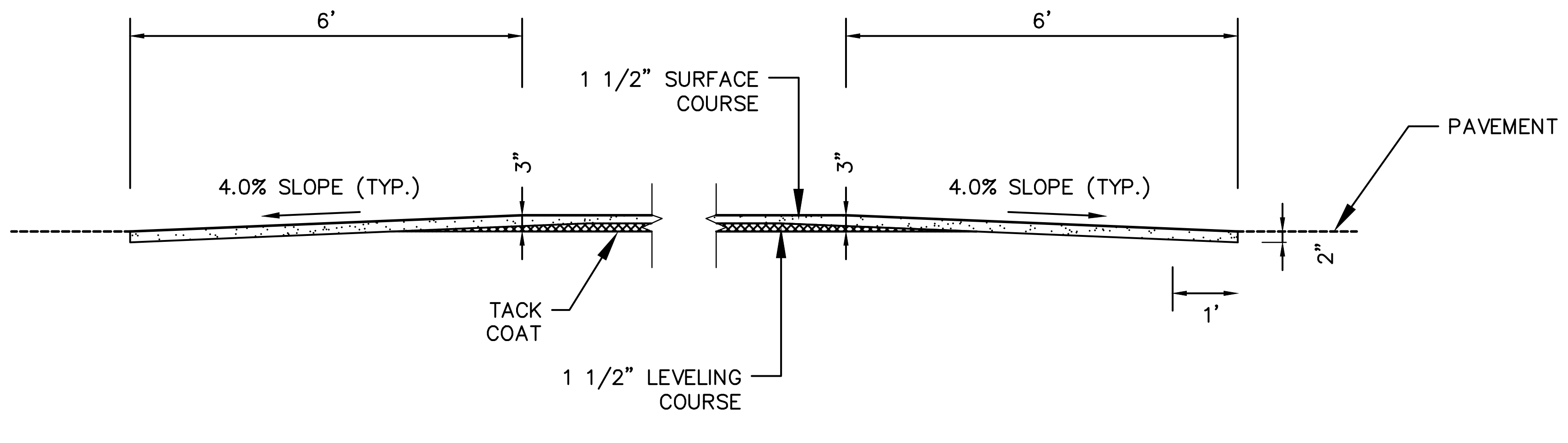
1. MAXIMUM POST SPACING SHALL BE 10'-0".
2. CHAIN LINK FENCE SHALL CONFORM TO AASHTO M 181.

5 C12 **VINYL CHAINLINK FENCE DETAIL**

SCALE: NONE



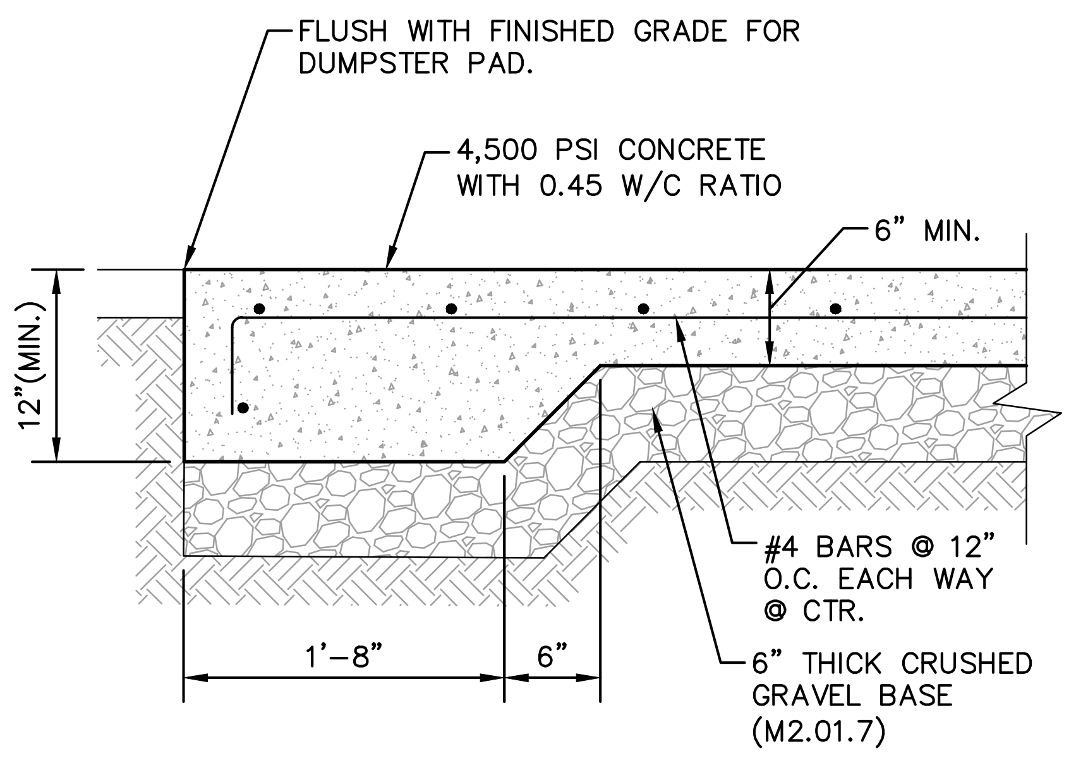
PLAN



SECTION A–A

6 C12 **SPEED TABLE WITH RAISED CROSSWALK DETAIL**

SCALE: NONE


FLUSH WITH FINISHED GRADE FOR DUMPSTER PAD.
4,500 PSI CONCRETE WITH 0.45 W/C RATIO
6" MIN.
12"(MIN.)
#4 BARS @ 12" O.C. EACH WAY @ CTR.
1'-8"
6"
6" THICK CRUSHED GRAVEL BASE (M2.01.7)

NOTE:

1. REFER TO SITE PLANS FOR DUMPSTER PAD DIMENSIONS.
2. ALL EXCAVATION, GRAVEL, CONCRETE, AND REBAR IS SUBSIDIARY TO CONCRETE DUMPSTER PAD.

7 C12 **TYPICAL DUMPSTER PAD DETAIL**

SCALE: NONE

WILLIAM R. DAVIDSON
CIVIL
NO. 50036

04/19/22

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SITE DETAILS 3

C12

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SHEET 16 OF 16